

Sample 4-8 Packet

1. *Thousands Green
2. Geometry Introduction
3. Money C
4. Time C
5. Fraction Match
6. Roman Numerals
7. Problem Solving D
8. *Mixed Practice D
9. *Fraction Concepts
10. **Decimal Cards
11. *Decimal Introduction
12. Rename
13. *Estimation
14. Advanced Numeration
15. Fraction Line Instructions
16. Order Fractions
17. Fraction Operations
18. More Fraction Operations
19. Inequalities
20. *Number Theory
21. Decimal Line Instructions
22. Order Decimals
23. Problem Solving E
24. *Mixed Practice E
25. *More Advanced Numeration
26. Decimal/Fraction Equivalence
27. Percent
28. Geometry Intermediate
29. *Advanced Decimals
30. *Advanced Geometry
31. Operations with Negatives
32. Order of Operations
33. Algebra Concepts
34. Algebraic Equations

*Actual free-response workpage

**Manipulative for student use

Insights into Math Concepts focuses on concepts rather than on drill and calculations that are readily available from most educational suppliers. Typically, any classroom has students with a wide range of abilities and skill levels, so the levels include work that is on-level, reinforcement, and advanced for the respective

www.conceptuallearning.com									Cardstock	Blackline	Digital PDF
K	1	2	3	4	5	6	7	8			
									Thousands (green)		
									Problem Solving C		
									Mixed Practice C		
									Geometry Introduction		
									Money C		
									Time C		
									Fraction Match		
									Roman Numerals		x
									Problem Solving D		
									Mixed Practice D		
									Fraction Concepts		
									Decimal Introduction		
									Rename	x	x
									Estimation		
									Advanced Numeration		
									Fraction Number Lines		x
									Sets (Cumulative)	x	x
									Order Fractions		
									Fraction Operations		
									More Fraction Operations		
									Inequalities	x	x
									Number Theory		
									Decimal Line & Labels		x
									Order Decimals		
									Problem Solving E		
									Mixed Practice E		
									More Advanced Numeration		
									Decimal Fraction Equivalence		
									Percent		
									Geometry Intermediate		
									Advanced Decimals		
									Advanced Geometry		
									Intervals (Whole numbers)		x
									Intervals (Positive reals)		x
									Intervals (Integers)		x
									Intervals (All reals)		x
									Operations with Negatives		
									Order of Operations		
									Order Reals		
									Algebra Concepts		
									Algebraic Equations		

grades. For example, the scope and sequence chart shows that “Roman Numerals” would be on-level for fourth grade and reinforcement for fifth grade.

Note that the materials come in a variety of formats. All taskcards are available in colorful reusable cardstock, reproducible blackline masters, or more cost-effective digital downloads. Exercises that are manipulated come in colorful cardstock that is to be laminated and cut. Most are also available as a reproducible blackline workpage format and digital workpage PDF downloads as well.

Thousands (Green)

Exercise 25 of 25

Name _____ Date _____

1) Rounded to the nearest hundred, 5,263 \approx _____

2) Rounded to the nearest ten, 6,437 \approx _____

3) Rounded to the nearest thousand, 3,747 \approx _____

4) Rounded to the nearest thousand, 5,499 \approx _____

5) Rounded to the nearest ten, 6,523 \approx _____

6) Rounded to the nearest hundred, 7,567 \approx _____

7) Rounded to the nearest ten, 9,347 \approx _____

8) Rounded to the nearest thousand, 6,638 \approx _____

9) Rounded to the nearest hundred, 2,122 \approx _____

10) Rounded to the nearest hundred, 8,500 \approx _____

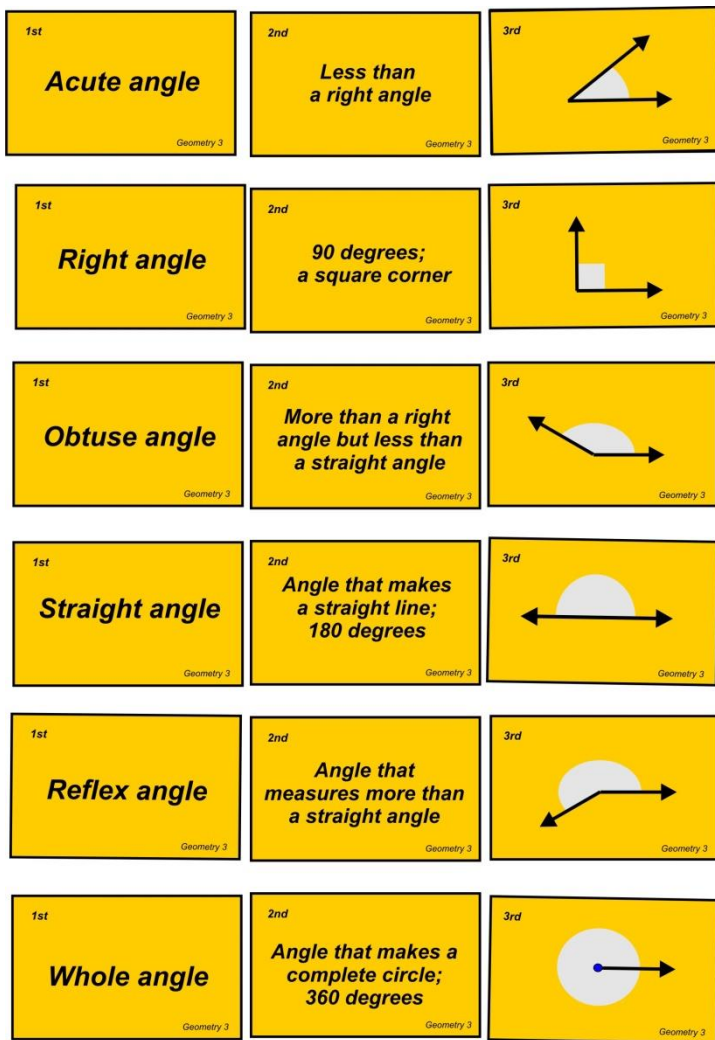
11) Rounded to the nearest thousand, 6,432 \approx _____

12) Rounded to the nearest ten, 8,998 \approx _____

Thousands 25

Geometry Introduction

(3 of 15)



Cardstock version

Appropriate for grades 3, 4, and 5, *Geometry Introduction* matching cards cover a wide range of skills including undefined terms (point, line and ray, etc.), types of lines, angles, plane figures, polygons, triangles, quadrilaterals, perimeter, area, solid figures, and volume. The 15-exercise set also includes answer keys and organization labels for containers.

Reproducible Blackline or Digital PDF Download

Geometry Introduction reproducible blackline masters and digital PDF downloads are free-response workpages that correspond to the cardstock counterparts.

Name _____		Date _____	
Word bank: segment, whole angle, straight angle, acute angle, ray, obtuse angle, reflex angle, acute angle, right angle			
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;"><i>Less than a right angle</i></p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;">90 degrees; a square corner</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;"><i>More than a right angle but less than a straight angle</i></p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;">Angle that makes a straight line; 180 degrees</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;"><i>Angle that measures more than a straight angle</i></p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
<p>1st</p> <p>-----</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>2nd</p> <p style="text-align: center;">Angle that makes a complete circle; 360 degrees</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	<p>3rd</p> <p style="text-align: right; font-size: small;">Geometry 3</p>	
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Money Match A, B, and C

1st Money C14	2nd Money C14	3rd \$10.50 Money C14
1st Money C14	2nd Money C14	3rd \$6.50 Money C14
1st Money C14	2nd Money C14	3rd \$2.74 Money C14
1st Money C14	2nd Money C14	3rd \$6.25 Money C14
1st Money C14	2nd Money C14 How much change?	3rd \$5.00 Money C14
1st Money C14	2nd Money C14 How much change?	3rd \$1.50 Money C14

Cardstock version

Money Match C is printed on ivory cardstock in black ink. Each level contains 15 incremented exercises, and the entire set includes all money concepts at the respective levels. The sets also include answer keys and organizational labels for containers.

Name _____		Date _____	
1st Money C14	2nd Money C14	3rd \$10.50 Money C14	
1st Money C14	2nd Money C14	3rd _____ Money C14	
1st Money C14	2nd Money C14	3rd _____ Money C14	
1st Money C14	2nd Money C14	3rd _____ Money C14	
1st Money C14	2nd Money C14 How much change?	3rd _____ Money C14	
1st Money C14	2nd Money C14 How much change?	3rd _____ Money C14	

Insights Into Math Concepts Hands-on Development Sets for School and Home Copyright 2004 Dianne M. Knesek Money C14



Reproducible Blackline or Digital PDF Download



Money reproducible blackline masters and digital downloads are free-response workpages that correspond to the cardstock counterparts.



Time Match A, B, and C

Cardstock version

Time C is printed on solar yellow cover stock in black ink. Each level contains 15 incremented exercises, and the entire set includes all time concepts at the respective levels. Specifically, Time C covers time to the minute, time intervals, and calendar work into previous and subsequent months. The sets also include answer keys and organizational labels for containers.

	2nd ← 9 o'clock 35 minutes earlier →	3rd 
---	--	--

1st 	2nd ← 3 o'clock 45 minutes earlier →	3rd 
--	--	--

1st 	2nd ← 10:20 30 minutes later →	3rd 
--	--------------------------------------	--




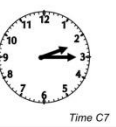

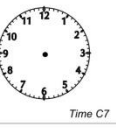

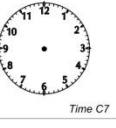
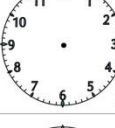

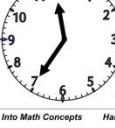
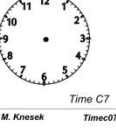
1st 	2nd ← 1:20 Half hour earlier →	3rd 
---	--------------------------------------	---

1st 	2nd ← 4:30 45 minutes later →	3rd 
--	-------------------------------------	--

1st 	2nd ← 11:35 50 minutes later →	3rd 
--	--------------------------------------	--

Reproducible Blackline or Digital PDF Download


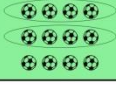
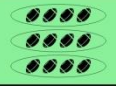



Time reproducible blackline masters are free-response workpages that correspond to the cardstock counterparts.

Name _____		Date _____	
1st 	2nd ← 9 o'clock 35 minutes earlier →	3rd 	
1st 	2nd ← ____ o'clock ____ minutes earlier →	3rd 	
1st 	2nd ← 10:20 30 minutes later →	3rd 	
1st 	2nd ← ____ Half hour earlier →	3rd 	
1st 	2nd ← 4:30 ____ minutes later →	3rd 	
1st 	2nd ← ____ 50 minutes later →	3rd 	


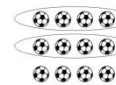
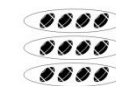



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Fraction Match

Fraction Matching cards were created as preparation for more abstract fraction work. Despite previous work with fraction manipulatives, many children do not understand concepts such as improper fractions, equivalent fractions, fraction of a set, and fractions on a number line. Fraction Match addresses these concepts through pictures. The series includes 15 incremented exercises, answer keys, and organizational labels.

1st  Fraction Match 14	2nd $\frac{1}{3}$ of 12 Fraction Match 14	3rd 4 Fraction Match 14
1st  Fraction Match 14	2nd $\frac{2}{3}$ of 12 Fraction Match 14	3rd 8 Fraction Match 14
1st  Fraction Match 14	2nd $\frac{3}{3}$ of 12 Fraction Match 14	3rd 12 Fraction Match 14
1st  Fraction Match 14	2nd $\frac{3}{5}$ of 15 Fraction Match 14	3rd 9 Fraction Match 14
1st  Fraction Match 14	2nd $\frac{2}{5}$ of 15 Fraction Match 14	3rd 6 Fraction Match 14
1st  Fraction Match 14	2nd $\frac{3}{4}$ of 20 Fraction Match 14	3rd 15 Fraction Match 14

Fraction Match reproducible masters and digital downloads have the same problems as the matching cards, but come in a free-response worksheet format on which children record their own answers.

Name _____		Date _____	
1st  Fraction Match 14	2nd $\frac{1}{3}$ of 12 Fraction Match 14	3rd 4 Fraction Match 14	
1st  Fraction Match 14	2nd $\frac{2}{3}$ of 12 Fraction Match 14	3rd _____ Fraction Match 14	
1st  Fraction Match 14	2nd $\frac{3}{3}$ of 12 Fraction Match 14	3rd _____ Fraction Match 14	
1st  Fraction Match 14	2nd $\frac{3}{5}$ of ____ Fraction Match 14	3rd _____ Fraction Match 14	
1st  Fraction Match 14	2nd ____ of 15 Fraction Match 14	3rd _____ Fraction Match 14	
1st  Fraction Match 14	2nd ____ of ____ Fraction Match 14	3rd _____ Fraction Match 14	

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Roman Numerals

Exercise 8 of 15

Roman Numerals is an incremented 15-exercise set that covers Roman Numeral–Arabic values up to 3000. Early exercises emphasize basic equivalencies as well as the similarly with base 10 expanded form. For example $139 = 100 + 30 + 9$ Arabic and $C + XXX + IX$ Roman (CXXXIX).

8 <small>Roman 12A</small>	VIII <small>Roman 12A</small>	119 <small>Roman 12B</small>	CXIX <small>Roman 12B</small>
36 <small>Roman 12A</small>	XXXVI <small>Roman 12A</small>	148 <small>Roman 12B</small>	CXLVIII <small>Roman 12B</small>
49 <small>Roman 12A</small>	XLIX <small>Roman 12A</small>	232 <small>Roman 12B</small>	CCXXXII <small>Roman 12B</small>
65 <small>Roman 12A</small>	LXV <small>Roman 12A</small>	250 <small>Roman 12B</small>	CCL <small>Roman 12B</small>
93 <small>Roman 12A</small>	XCIII <small>Roman 12A</small>	349 <small>Roman 12B</small>	CCCXLIX <small>Roman 12B</small>
105 <small>Roman 12A</small>	CV <small>Roman 12A</small>	380 <small>Roman 12B</small>	CCCLXXX <small>Roman 12B</small>

Roman Numeral reproducible masters have the same problems as the matching cards, but come in a free-response worksheet format which includes both Arabic to Roman and Roman to Arabic. Digital PDF download worksheets will be available in 2021.

Name _____	Date _____
<small>Write the Roman numeral that corresponds with the standard numeral given. The first one is done for you.</small>	
8	VIII
36	
49	
65	
93	
105	
119	
148	
232	
250	
349	
380	







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Name _____	Date _____
<small>Write the Arabic (standard) numeral that corresponds with the Roman numeral given. The first one is done for you.</small>	
VIII	8
XXXVI	
XLIX	
LXV	
XCIII	
CV	
CXIX	
CXLVIII	
CCXXXII	
CCL	
CCCXLIX	
CCCLXXX	

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Problem Solving Match

Levels A, B, C, D, and E

<p>1st</p>  <p>48 owls got fitted for glasses. How many lenses?</p> <p>Problems D11</p>	<p>2nd</p> <p>48×2</p> <p>Problems D11</p>	<p>3rd</p> <p>96</p> <p>Problems D11</p>
<p>1st</p>  <p>How many octopi would be supplied with 48 slippers?</p> <p>Problems D11</p>	<p>2nd</p> <p>$48 \div 8$</p> <p>Problems D11</p>	<p>3rd</p> <p>6</p> <p>Problems D11</p>
<p>1st</p>  <p>If Fido slept from 8:00 pm to 11:00 am. How many hours did he sleep?</p> <p>Problems D11</p>	<p>2nd</p> <p>$4 + 11$</p> <p>Problems D11</p>	<p>3rd</p> <p>15</p> <p>Problems D11</p>
<p>1st</p>  <p>Monkey Hear, Monkey See and Monkey Do shared 48 bananas. How many each?</p> <p>Problems D11</p>	<p>2nd</p> <p>$48 \div 3$</p> <p>Problems D11</p>	<p>3rd</p> <p>16</p> <p>Problems D11</p>
<p>1st</p>  <p>96 fleas shared 8 dogs. How many fleas on each dog?</p> <p>Problems D11</p>	<p>2nd</p> <p>$96 \div 8$</p> <p>Problems D11</p>	<p>3rd</p> <p>12</p> <p>Problems D11</p>
<p>1st</p>  <p>Charlotte bought Reeboks for her 96 children. How many shoes?</p> <p>Problems D11</p>	<p>2nd</p> <p>96×8</p> <p>Problems D11</p>	<p>3rd</p> <p>768</p> <p>Problems D11</p>

Problem Solving Matching cards are printed with black ink on colored cardstock. The "1st card" can be placed in any order, but the "2nd" and "3^d" cards must be placed with the appropriate question cards. Level D is printed on blue cardstock which is to be laminated and cut. Another option is to use the 1st card as a free-response exercise and the remaining cards as a control. Problem Solving D has 20 exercises, an answer key, and organization labels for containers.

Problem Solving reproducible masters come in a free-response worksheet format on which children record their own answers. Reproducible blacklines come in black ink on white paper, but digital downloads may be printed either in black and white or in color depending on the user's printer.

Name _____		Date _____	
<p>1st</p>  <p>48 owls got fitted for glasses. How many lenses?</p> <p>Problems D11</p>	<p>2nd</p> <p>48×2</p> <p>Problems D11</p>	<p>3rd</p> <p>96</p> <p>Problems D11</p>	
<p>1st</p>  <p>How many octopi would be supplied with 48 slippers?</p> <p>Problems D11</p>	<p>2nd</p> <p>Problems D11</p>	<p>3rd</p> <p>Problems D11</p>	
<p>1st</p>  <p>If Fido slept from 8:00 pm to 11:00 am. How many hours did he sleep?</p> <p>Problems D11</p>	<p>2nd</p> <p>Problems D11</p>	<p>3rd</p> <p>Problems D11</p>	
<p>1st</p>  <p>Monkey Hear, Monkey See and Monkey Do shared 48 bananas. How many each?</p> <p>Problems D11</p>	<p>2nd</p> <p>Problems D11</p>	<p>3rd</p> <p>Problems D11</p>	
<p>1st</p>  <p>96 fleas shared 8 dogs. How many fleas on each dog?</p> <p>Problems D11</p>	<p>2nd</p> <p>Problems D11</p>	<p>3rd</p> <p>Problems D11</p>	
<p>1st</p>  <p>Charlotte bought Reeboks for her 96 children. How many shoes?</p> <p>Problems D11</p>	<p>2nd</p> <p>Problems D11</p>	<p>3rd</p> <p>Problems D11</p>	

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Mixed Practice
A, B, C, D, & E

Incremental overview of all level-appropriate skills. Great as diagnostic assessment or as cumulative review.

Name _____

Level D

1) 2 hundredths $\frac{\quad}{\quad}$ $\frac{\quad}{\quad}$
fraction *decimal*

2) Eight and 2 hundredths $\frac{\quad}{\quad}$ $\frac{\quad}{\quad}$
fraction *decimal*

3) Estimate the product of 82 and 69 _____

4) How many feet in 48 inches? _____

5) $\square + 97 = 341$ _____

6) 3 weeks and 6 days = _____ days

7) Greatest common factor of 12 and 15 _____

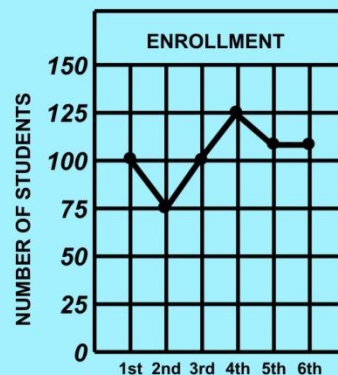
8) $\frac{1}{4}$ of 9 = _____
Mixed number

9) $9112 - 6881 =$ _____

10)
$$\begin{array}{r} 21 \\ \times 30 \\ \hline \end{array}$$

11) $4\frac{7}{8} - 3\frac{2}{8} = \square$

12)
$$2 \overline{)16381}$$



13) How many more students in grade 4 than grade 2?

14) How many students in 1st, 2nd, and 3rd grades combined?

Mixed Practice 10

Mixed Practice D & E each have 20 half-page task-cards.

All taskcards are available in colorful cardstock, reproducible blackline masters, or digital PDF downloads.

Fraction Concepts (20 of 20)

(cardstock, reproducible blackline masters, & digital downloads)

Fraction Concepts is graphic full-page bridging material encompassing all basic fraction concepts: equivalency, comparisons, reducing, improper to mixed numbers, mixed to improper, renaming, fraction of a group, addition and subtraction of like fractions, basic multiplication and division of fraction by whole number, and word problems, and answer keys. It is available in all three formats.

Name _____ Date _____

1) In the fraction $\frac{2}{3}$, the denominator is _____, and the numerator is _____.

Proper (P), improper (I), or mixed number (MN)?

2) $\frac{4}{3}$ _____ 3) $\frac{3}{3}$ _____ 4) $\frac{2}{3}$ _____ 5) $1\frac{2}{3}$ _____

>, <, or = ?

6) $\frac{3}{5}$ _____ $\frac{2}{5}$ 7) $\frac{1}{2}$ _____ $\frac{2}{4}$ 8) $\frac{2}{3}$ _____ $\frac{3}{2}$ 9) $\frac{1}{8}$ _____ $\frac{1}{9}$

Simplify:

10) $\frac{3}{9}$ _____ 11) $\frac{5}{4}$ _____ 12) $2\frac{6}{8}$ _____ 13) $1\frac{4}{3}$ _____

Work the problems & simplify answers if possible. (*Hint, sometimes it helps to simplify first too.)

14) $\frac{8}{9} + \frac{2}{9} =$ _____ 15) $\frac{8}{9} - \frac{2}{9} =$ _____

16) $5\frac{3}{4} + 2\frac{1}{4} =$ _____ 17) $\frac{4}{15} + \frac{5}{15} =$ _____

18) $4\frac{3}{5} + 1\frac{3}{5} =$ _____ 19) $5\frac{9}{10} - 1\frac{3}{10} =$ _____

20) $3\frac{3}{5} \times 3 =$ _____ 21) $12\frac{9}{10} \div 3 =$ _____

22)* $3\frac{3}{5} + \frac{4}{4} =$ _____ 23)* $3\frac{6}{7} + 2\frac{3}{3} =$ _____

24)** $1\frac{1}{3} + 5\frac{2}{5} + 2\frac{2}{3} + 1\frac{1}{5} =$ _____

25)



Juan rode his bike $\frac{3}{4}$ mile. Since there are 1,760 yards in one mile, how many yards did he ride his bike? _____

Fraction Concepts 20

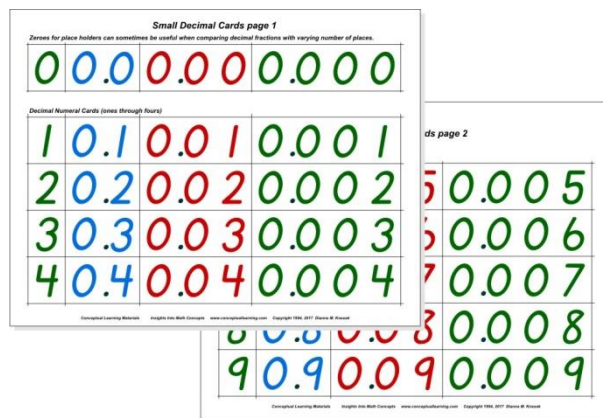
Montessori Three-Place Decimal Cards

Our color-coded decimal cards include units, tenths, hundredths, and thousandths. As in other Montessori materials, units and thousandths are signified by the color green, tenths are blue, and hundredths are red.

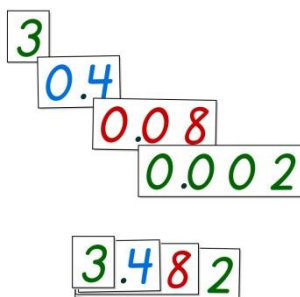
Your set includes an introduction, one set of large cards and three separate sets of small cards. Also included are two reproducible decimal grids for extensions.

Preparation

- Laminate all pages except for the instructions and decimal grids which are to be photocopied for children to write on.
- Cut the cards that you need and save the rest for spare parts. Organize sequentially by size and color. Stack and secure with rubber bands. The entire set can be stored in a 9-inch plastic sorter.



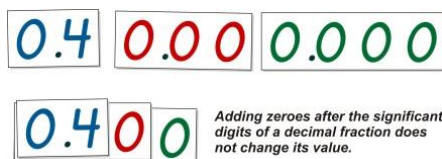
The introduction is used to introduce the place values concepts of one unit, tenth, hundredth, and thousandth. This set of cards is larger than the others.



Decimal cards are extremely helpful in discovering the meaning and value of decimal fractions.

Decimal equivalencies

In advance of challenging exercises, it would be helpful to guide the student in discovering decimal equivalence. An example is that 0.4, 0.40, 0.400, and all have the same value. Also stress that zeros before the decimal point have no value. For example $0.4 = .4$ because zero and four tenths means the same thing as four tenths.



As with the regular Montessori numeral cards, the decimal cards are often used in conjunction with manipulatives for operations. The large cards may be used to represent the large values such as sums, minuends, products, and dividends. Small cards are used to represent smaller values such as addends, factors, subtrahends, differences, and quotients.

Decimal grids can be used for decimal numbers of various decimal places on both sides of the decimal point -- from whole numbers through hundred thousands to decimal numbers through millionths.

Small Decimal Cards page 1

Zeroes for place holders can sometimes be useful when comparing decimal fractions with varying number of places.

0	0.0	0.00	0.000
---	-----	------	-------

Decimal Numeral Cards (ones through fours)

1	0.1	0.01	0.001
2	0.2	0.02	0.002
3	0.3	0.03	0.003
4	0.4	0.04	0.004

Small Decimal Cards page 2

Decimal Numeral Cards (fives through nines)

5	0.5	0.05	0.005
6	0.6	0.06	0.006
7	0.7	0.07	0.007
8	0.8	0.08	0.008
9	0.9	0.09	0.009

Decimal Introduction (20 of 20)

(cardstock, reproducible blackline masters, & digital downloads)

Decimal Introduction is full-page taskcard set encompassing two- and three-place decimals. The sample depicts the cumulative exercise for the entire set, with each of the included skills addressed in an earlier page. All taskcard series are available in all three formats.

Name _____ Date _____

In 24.18

- 1) What digit is in the tenths' place? _____
- 2) What digit is in the tens' place? _____

Change to a decimal

- 3) $\frac{5}{10} =$ _____
- 4) $3\frac{14}{100} =$ _____
- 5) $9\frac{3}{100} =$ _____
- 6) $3\frac{6}{10} =$ _____
- 7) $17\frac{32}{100} =$ _____

Change to a fraction

- 8) $3.3 =$ _____
- 9) $4.67 =$ _____
- 10) $19.07 =$ _____

11) Round 23.46 to nearest tenth _____

12) Round 165.51 to nearest whole _____

Work the following problems:

- 13) $4.65 + 0.2 =$ _____
- 14) $5.86 - 3 =$ _____
- 15) $2.4 \times 7 =$ _____
- 16) $2.84 \div 4 =$ _____
- 17) $\$5 - \$2.46 =$ _____
- 18) $3.5 \times 3 =$ _____

Introduction to Decimals 20

Rename

Exercise 7 of 10

1st step 862 <small>Rename 7</small>	2nd step $\begin{array}{r} 5\ 12 \\ 8\ \cancel{6}\ 2 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 7\ 15\ 12 \\ \cancel{8}\ \cancel{6}\ 2 \end{array}$ <small>Rename 7</small>
1st step 430 <small>Rename 7</small>	2nd step $\begin{array}{r} 2\ 10 \\ 4\ \cancel{3}\ 0 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 3\ 12\ 10 \\ \cancel{4}\ \cancel{3}\ 0 \end{array}$ <small>Rename 7</small>
1st step 382 <small>Rename 7</small>	2nd step $\begin{array}{r} 7\ 12 \\ 3\ \cancel{8}\ 2 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 2\ 17\ 12 \\ \cancel{3}\ \cancel{8}\ 2 \end{array}$ <small>Rename 7</small>
1st step 283 <small>Rename 7</small>	2nd step $\begin{array}{r} 7\ 13 \\ 2\ \cancel{8}\ 3 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 1\ 17\ 13 \\ \cancel{2}\ \cancel{8}\ 3 \end{array}$ <small>Rename 7</small>
1st step 918 <small>Rename 7</small>	2nd step $\begin{array}{r} 0\ 18 \\ 9\ \cancel{1}\ 8 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 8\ 10\ 18 \\ \cancel{9}\ \cancel{1}\ 8 \end{array}$ <small>Rename 7</small>
1st step 350 <small>Rename 7</small>	2nd step $\begin{array}{r} 4\ 10 \\ 3\ \cancel{5}\ 0 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 2\ 14\ 10 \\ \cancel{3}\ \cancel{5}\ 0 \end{array}$ <small>Rename 7</small>
1st step 655 <small>Rename 7</small>	2nd step $\begin{array}{r} 4\ 15 \\ 6\ \cancel{5}\ 5 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 5\ 14\ 15 \\ \cancel{6}\ \cancel{5}\ 5 \end{array}$ <small>Rename 7</small>
1st step 565 <small>Rename 7</small>	2nd step $\begin{array}{r} 5\ 15 \\ 5\ \cancel{6}\ 5 \end{array}$ <small>Rename 7</small>	3rd step $\begin{array}{r} 4\ 15\ 15 \\ \cancel{5}\ \cancel{6}\ 5 \end{array}$ <small>Rename 7</small>

“Rename” Matching Cards

Each Rename exercise is printed on a full page. It entails matching regrouped values with the original. More advanced than its predecessor Exchange, Rename prepares the student for multiple regroupings required in multi-digit addition and subtraction operations.

Frequently, Rename is introduced with place value blocks or other hands-on place value materials, but the child is soon able to abstract the process. The last couple of exercises prepare for subtraction with zeroes in the minuend.

Rename is available only as a cardstock matching exercise. Cardstock manipulatives require lamination and cutting.

Estimation (10 of 10)

(cardstock, reproducible blackline masters, & digital downloads)

Estimation is a full-page 10-exercise taskcard set to develop estimation skills. Featured is rounding to estimate sums, differences, products, and quotients involving whole numbers, mixed numbers, and dollars and cents. The sample depicts the cumulative exercise for the entire set, with each of the included skills addressed on an earlier page. Answer sheets are included. All taskcard series are available in all three formats.

Name _____ Date _____

Estimate the following.

1) $5893 + 1758 \approx 6000 + 2000 \approx 8000$

2) 629×78 _____

3) $5\frac{2}{3} + 9\frac{1}{10}$ _____

4) $\$8.23 - \1.68 _____

5) $8756 + 165$ _____

6) $5\frac{8}{9} \times 1\frac{2}{15}$ _____

7) $518 - 175$ _____

8) 586×21 _____

9) $\$98.99 + \2.99 _____

10) $\frac{1}{8}$ of 79 _____

11) $5263 - 29$ _____

12) $\$19.99 + \4.06 _____

13) $8632 - 173$ _____

14) $\frac{1}{5}$ of 44 _____

15) $8419 \div 3$ _____

Estimation 10

Advanced Numeration

(cardstock, reproducible blackline masters, & digital downloads)

Advanced Numeration is a full-page 20-exercise taskcard set involving numeration concepts of whole numbers up to 9 digits: place value, expanded form, comparisons, adding powers of 10, reading large numerals, rounding, cumulative review, and answer key. All taskcard series are available in all three formats.

Advanced Numeration 3

Name _____

Date _____

- 1) 4 hundred thousands, 1 million, 4 ones, 7 hundreds, 2 tens = 1,400,724
- 2) 3 hundreds, 9 tens, 2 millions, 6 hundred thousands, 4 thousands, = _____
- 3) 2 thousands, 3 hundreds, 9 millions, 3 ten thousands, 8 tens = _____
- 4) 4 tens, 8 ones, 1 hundred thousand, 6 ten thousands, 2 hundreds = _____
- 5) 4 hundreds, 1 ten, 6 ones, 4 ten thousands, 5 thousands = _____
- 6) 3 thousands, 2 hundreds, 4 tens, 9 millions, 4 hundred thousands = _____
- 7) 3 millions, 4 hundred thousands, 5 ten thousand = _____
- 8) 2 tens, 4 millions, 8 ten thousands, 1 thousand = _____
- 9) 2 ten thousands, 3 hundred thousands, 3 hundred = _____
- 10) 7 tens, 3 millions, 3 hundreds, 2 ones = _____
- 11) 3 ones, 5 millions, 9 tens = _____
- 12) 3 hundred thousands, 4 tens, 4 millions, = _____
- 13) 3 hundreds, 8 tens, 3 ones, 7 millions, 4 thousand = _____
- 14) 3 thousands, 5 hundreds, 1 ten, 6 hundred = _____
- 15) 3 millions, 4 tens, 9 hundreds = _____

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Name _____ Date _____

- 1) Ten thousand's place in 18,721,345 ? _____
- 2) One million's place in 18,721,345 ? _____
- 3) Hundred thousand's place in 18,721,345 ? _____
- 4) 3 millions, 7 hundreds, 2 tens, 8 ones = _____
- 5) 8 millions, 6 hundred thousands, 2 tens = _____
- 6) 867,987 $(<, >, \text{ or } =)$ 876,999 _____
- 7) 3,345,000 $(<, >, \text{ or } =)$ 3,344,999 _____
- 8) One million more than 19,000,000 = _____
- 9) Thousand more than 4,599,000 = _____
- 10) Hundred more than 267,988 = _____
- 11) One million less than 1,000,000 = _____
- 12) Hundred less than 2,049 = _____
- 13) Thousand less than 100,999 = _____
- 14) $2,960,000 + 100,000 =$ _____
- 15) $408,000 - 10,000 =$ _____
- 16) $1,009,000 - 100,000 =$ _____
- 17) Three million, one thousand, eighty-two = _____
- 18) Six thousand, three hundred forty-one = _____
- 19) Round 9,499,000 to the nearest million = _____
- 20) Round 345,999 to the nearest thousand = _____

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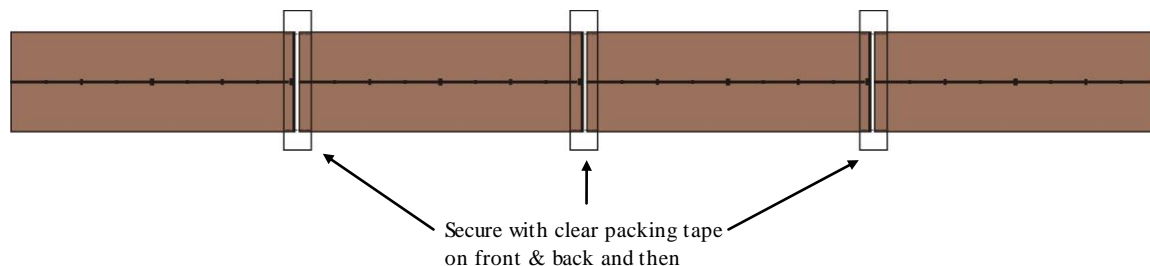
Fraction Line and Tags

Purpose: to visualize the relationship between proper fractions, improper fractions, and mixed numbers and to acquire an intuitive understanding of their value.

Contents

- Ten color-coded fraction lines. For the most part, colors correspond to Montessori short-bead-stair colors. For example, halves correspond to the green “two” beads, thirds correspond to the pink “three” beads, and so on.
- Two identical sheets of ivory tags that include un-simplified proper and improper fractions (one sheet is to use, and the second is for spare parts).
- Two identical sheets of white tags representing simplified and mixed-number versions that correspond to the respective ivory tags (again, one sheet is for use, and the second set is for spare parts).

Preparation of lines: Laminate the colored lines as well as the four pages of labels before cutting. Cut each set of colored lines along the dashed lines. Butt the four sections end-to-end and secure on both the front and back with clear packing tape. Trim the tape so it is even with the rest of the line. You will have created lines that are each four units long and subdivided into various fractional parts. If desired, you may fold “accordion-style” and place all fraction lines together in a 3 x 9 organizer for storage.



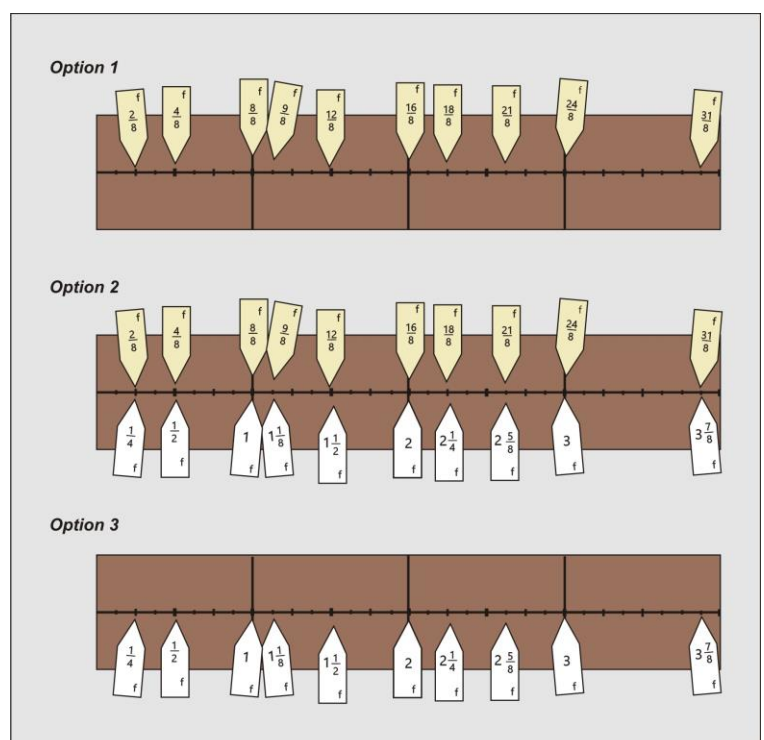
Preparation of tags: The four pages of tags should be laminated before cutting. Set one page of ivory tags and one page of white tags aside and save for future replacement parts.

Systematically cut the “half” tags on the ivory sheet and the “half” tags on the white sheet and store them in the same hardware drawer, box, or zip-lock envelope. The “half” tags are all designated with the letter “a” on the edge. Systematically do the same for thirds (b), fourths (c), fifths (d), and so on. When you have finished, you will have eleven different containers, each with about 10 ivory tags and 10 white tags. You may label the containers with the appropriate adhesive label which was included in your set.

Presentation: The child uses a specific number line with the appropriate tags. For examples, the “halves” number line is green, and it goes with the “halves” tags in the container with the letter “a”. Each number line is intended for a specific fractional part and is used with corresponding tags.

It is recommended that younger students progress through the set sequentially until it becomes challenging. Older children may relate to their previous knowledge of equivalent fractions.

The child opens the appropriate line and places it on a table or rug. He or she places the ivory tags along the top of the line (Option 1). The next phase would be to start with the ivory tags on the top and immediately place the white tags in the corresponding position along the bottom (Option 2); this phase can be valuable in discovering the relationship of the two versions. The final and most abstract phase is placement of the white tags first (Option 3). For this phase the ivory tags may be used as a control to self-check the work.



Fraction Order

(7 of 10)

$\frac{3}{8}$ <small>Fraction Order 7A</small>	$\frac{1}{2}$ <small>Fraction Order 7A</small>	$\frac{5}{8}$ <small>Fraction Order 7A</small>	$\frac{3}{4}$ <small>Fraction Order 7A</small>	$\frac{7}{8}$ <small>Fraction Order 7A</small>	1 <small>Fraction Order 7A</small>
---	---	---	---	---	--

$\frac{1}{3}$ <small>Fraction Order 7B</small>	$\frac{5}{12}$ <small>Fraction Order 7B</small>	$\frac{1}{2}$ <small>Fraction Order 7B</small>	$\frac{7}{12}$ <small>Fraction Order 7B</small>	$\frac{2}{3}$ <small>Fraction Order 7B</small>	$\frac{3}{4}$ <small>Fraction Order 7B</small>
---	--	---	--	---	---

$\frac{1}{15}$ <small>Fraction Order 7C</small>	$\frac{2}{15}$ <small>Fraction Order 7C</small>	$\frac{1}{5}$ <small>Fraction Order 7C</small>	$\frac{4}{15}$ <small>Fraction Order 7C</small>	$\frac{1}{3}$ <small>Fraction Order 7C</small>	$\frac{2}{5}$ <small>Fraction Order 7C</small>
--	--	---	--	---	---

$\frac{1}{8}$ <small>Fraction Order 7D</small>	$\frac{3}{16}$ <small>Fraction Order 7D</small>	$\frac{1}{4}$ <small>Fraction Order 7D</small>	$\frac{5}{16}$ <small>Fraction Order 7D</small>	$\frac{3}{8}$ <small>Fraction Order 7D</small>	$\frac{7}{16}$ <small>Fraction Order 7D</small>
---	--	---	--	---	--

Fraction sequencing cards are four separate sequences of six fractional values ordered from least to greatest: like denominators, like and unlike fractions, improper fractions, and mixed numbers. Initially students can use fraction manipulatives or charts as aids, but when ready to abstract they can rely on the intuition gained through hands-on work or through finding common denominators. Incremented by level of difficulty, the set includes 10 separate exercises – each printed on a separate sheet. Organizational labels for containers and answer keys are included. All manipulative cardstock work requires lamination and cutting.

Fraction Order reproducible masters and digital downloads have the same problems as the matching cards, but come in a free-response worksheet format on which children record their own answers.

Name _____		Date _____				
Student is to select appropriate fraction (left of each row) to sequence fractions from least to greatest.	$\frac{3}{8}$ <small>Fraction Order 7A</small>	$\frac{1}{2}$ <small>Fraction Order 7A</small>	$\frac{5}{8}$ <small>Fraction Order 7A</small>	$\frac{3}{4}$ <small>Fraction Order 7A</small>	$\frac{7}{8}$ <small>Fraction Order 7A</small>	1 <small>Fraction Order 7A</small>
	$\frac{1}{3}$ <small>Fraction Order 7B</small>	$\frac{5}{12}$ <small>Fraction Order 7B</small>	$\frac{1}{2}$ <small>Fraction Order 7B</small>	$\frac{7}{12}$ <small>Fraction Order 7B</small>	$\frac{2}{3}$ <small>Fraction Order 7B</small>	$\frac{3}{4}$ <small>Fraction Order 7B</small>
	$\frac{2}{15}$ <small>Fraction Order 7C</small>	$\frac{2}{5}$ <small>Fraction Order 7C</small>	$\frac{1}{5}$ <small>Fraction Order 7C</small>	$\frac{4}{15}$ <small>Fraction Order 7C</small>	$\frac{1}{3}$ <small>Fraction Order 7C</small>	$\frac{2}{5}$ <small>Fraction Order 7C</small>
	$\frac{5}{16}$ <small>Fraction Order 7D</small>	$\frac{3}{16}$ <small>Fraction Order 7D</small>	$\frac{1}{4}$ <small>Fraction Order 7D</small>	$\frac{5}{16}$ <small>Fraction Order 7D</small>	$\frac{3}{8}$ <small>Fraction Order 7D</small>	$\frac{7}{16}$ <small>Fraction Order 7D</small>

Fraction Operations

(cardstock, reproducible blackline masters, & digital downloads)

Fraction Operations is a step-by-step 13-exercise series focusing on addition and subtraction of unlike fractions: equivalent fractions, common denominators, unlike proper fractions, unlike mixed numbers, regrouping of fractional minuends, multi-step subtraction requiring common denominators and regrouping, cumulative review, and answer key. All taskcards are available in all three formats.

Name _____ Date _____

1) $\frac{1}{3} = \frac{2}{6}$ 2) $\frac{2}{3} = \frac{4}{6}$ 3) $\frac{3}{8} = \frac{9}{24}$
 $+\frac{1}{2} = \frac{3}{6}$ $-\frac{1}{4} = \frac{3}{12}$ $+\frac{5}{6} = \frac{20}{24}$
 $\frac{5}{6}$

4) $\frac{5}{12} = \frac{5}{12}$ 5) $\frac{5}{8} = \frac{5}{8}$ 6) $\frac{9}{10} = \frac{9}{10}$
 $+\frac{3}{8} = \frac{3}{8}$ $-\frac{2}{5} = \frac{2}{5}$ $-\frac{2}{3} = \frac{2}{3}$

7) $\frac{3}{4} = \frac{3}{4}$ 8) $\frac{9}{10} = \frac{9}{10}$ 9) $\frac{4}{5} = \frac{4}{5}$
 $-\frac{1}{3} = \frac{1}{3}$ $+\frac{3}{4} = \frac{3}{4}$ $+\frac{1}{2} = \frac{1}{2}$

10) $\frac{2}{3} = \frac{2}{3}$ 11) $\frac{5}{6} = \frac{5}{6}$ 12) $\frac{7}{10} = \frac{7}{10}$
 $+\frac{1}{4} = \frac{1}{4}$ $-\frac{3}{4} = \frac{3}{4}$ $-\frac{1}{3} = \frac{1}{3}$

13) $\frac{7}{8} = \frac{7}{8}$ 14) $\frac{5}{12} = \frac{5}{12}$ 15) $\frac{2}{9} = \frac{2}{9}$
 $-\frac{5}{6} = \frac{5}{6}$ $+\frac{3}{8} = \frac{3}{8}$ $+\frac{5}{6} = \frac{5}{6}$

Fraction Operations 5

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Name _____ Date _____

1) $5 = 4\frac{2}{2}$ 2) $9 = 8\frac{1}{4}$ 3) $7 = 6\frac{1}{10}$
 $-\frac{1}{2} = \frac{1}{2}$ $-\frac{3}{4} = \frac{3}{4}$ $-\frac{9}{10} = \frac{9}{10}$
 $4\frac{1}{2}$

4) $4 = 3\frac{1}{8}$ 5) $6 = 5\frac{1}{7}$ 6) $9 = 8\frac{1}{9}$
 $-3\frac{1}{8} = 3\frac{1}{8}$ $-2\frac{3}{7} = 2\frac{3}{7}$ $-5\frac{6}{7} = 5\frac{6}{7}$

7) $12 =$ 8) $8 =$ 9) $10 =$
 $-4\frac{11}{12} =$ $-6\frac{9}{10} =$ $-1\frac{13}{15} =$

10) $1 =$ 11) $3 =$ 12) $18 =$
 $-\frac{9}{10} =$ $-1\frac{5}{6} =$ $-9\frac{1}{2} =$

13) $34 =$ 14) $82 =$ 15) $100 =$
 $-12\frac{2}{5} =$ $-14\frac{6}{7} =$ $-39\frac{5}{9} =$

Fraction Operations 8

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Date _____

1) $3\frac{3}{4} = 3\frac{3}{4}$ 2) $8 =$ 3) $9\frac{1}{2} =$
 $+2\frac{1}{2} = 2\frac{2}{4}$ $+2\frac{3}{4} =$ $-3\frac{1}{4} =$
 $5\frac{5}{4} = 6\frac{1}{4}$

4) 4 5) $7\frac{3}{4}$ 6) $8\frac{11}{12}$
 $-1\frac{3}{4}$ $+2\frac{2}{3}$ $-4\frac{1}{3}$

7) $3\frac{2}{3}$ 8) $7\frac{5}{12}$ 9) $9\frac{3}{4}$
 $+8\frac{7}{8}$ $-1\frac{7}{12}$ $+7\frac{5}{6}$

10) $7 + 3\frac{1}{5} + 6\frac{3}{4}$ 11) $9 + 4\frac{3}{4}$ 12) $7\frac{1}{4} - 3\frac{5}{6}$

13) $5\frac{3}{4} + 2\frac{1}{4} + 3\frac{3}{8}$ 14) $5 - 1\frac{3}{4}$ 15) $7\frac{1}{3} - 4\frac{2}{3}$

Fraction Operations 13

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More Fraction Operations

(cardstock, reproducible blackline masters, & digital downloads)

More Fraction Operations is an illustrated, step-by-step 20-exercise series focusing on multiplication & division of fractions, whole numbers, and mixed numbers. After practice with initial presentations, shortcuts such as cancelling are also presented. Multiplication and division are presented in vertical steps much as algebra is. More Fraction Operations 18 is a cumulative review of all multiplication & division of fractions, while 19 and 20 are cumulative reviews of all four fraction operations. All taskcards & answers are available in all three formats..

Name _____ Date _____

1) $\frac{1}{3}$ of $\frac{1}{6} = \frac{1}{18}$

2) $\frac{1}{4} \times \frac{3}{4} = \frac{\quad}{\quad}$

3) $\frac{1}{3} \times \frac{2}{5} = \frac{\quad}{\quad}$

4) $\frac{1}{9} \times \frac{2}{5} = \frac{\quad}{\quad}$

5) $\frac{3}{8} \times \frac{1}{2} = \frac{\quad}{\quad}$

6) $\frac{1}{3} \times \frac{2}{3} = \frac{\quad}{\quad}$

7) $\frac{1}{6} \times \frac{5}{6} = \frac{\quad}{\quad}$

8) $\frac{4}{5} \times \frac{2}{3} = \frac{\quad}{\quad}$

9) $\frac{3}{4} \times \frac{1}{2} = \frac{\quad}{\quad}$

10) $\frac{1}{9} \times \frac{2}{3} = \frac{\quad}{\quad}$

More Fraction Operations 3

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Name _____ Date _____

A reciprocal is the fraction that gives a product of one.

$\frac{3}{4} \times \frac{4}{3} = \frac{12}{12} = 1$

$8 = \frac{8}{1}$
 $\frac{8}{1} \times \frac{1}{8} = \frac{8}{8} = 1$

$1\frac{3}{4} = \frac{7}{4}$
 $\frac{7}{4} \times \frac{4}{7} = \frac{28}{28} = 1$

Find the reciprocal

1) $\frac{1}{2}$ _____

2) $\frac{1}{8}$ _____

3) 3 _____

4) $6\frac{1}{3}$ _____

9) $3\frac{2}{9}$ _____

10) $6\frac{1}{5}$ _____

11) $2\frac{3}{4}$ _____

12) $6\frac{4}{5}$ _____

13) $2\frac{4}{5}$ _____

14) $1\frac{5}{6}$ _____

15) $1\frac{1}{3}$ _____

16) $7\frac{1}{2}$ _____

More Fraction Operations 13

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_____ Date _____

3) $\frac{1}{2} \div 3\frac{1}{2} = \frac{\quad}{\quad}$

4) $6 \times \frac{5}{6} = \frac{\quad}{\quad}$

5) $6 \div \frac{5}{6} = \frac{\quad}{\quad}$

6) $3\frac{1}{4} \div 4 = \frac{\quad}{\quad}$

7) $2\frac{1}{2} \div 3 = \frac{\quad}{\quad}$

8) $2\frac{1}{2} \times 3 = \frac{\quad}{\quad}$

9) $5 \div 1\frac{1}{2} = \frac{\quad}{\quad}$

10) $5 \times 1\frac{1}{2} = \frac{\quad}{\quad}$

11) $2\frac{1}{4} \div 4\frac{1}{2} = \frac{\quad}{\quad}$

12) $3\frac{1}{5} \times 10 = \frac{\quad}{\quad}$

13) $7\frac{1}{2} \div 7\frac{1}{2} = \frac{\quad}{\quad}$

14) $3\frac{1}{3} \times 2\frac{1}{4} = \frac{\quad}{\quad}$

More Fraction Operations 18

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Inequalities

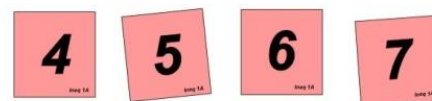
(1 of 15)

Developing logic and critical thinking skills, *Inequalities* is a comfortable introduction to basic algebraic notation. Algebraic representations of open and closed intervals are solved by selecting solution cards from a given replacement set. The series introduces variables as well as the relationship symbols $>$, \geq , $<$, and \leq . *Inequalities* is printed in black ink on salmon cardstock and includes a paper answer key. There are 15 separate exercises, each with six problems. The cardstock manipulative exercise requires lamination and cutting. Organizational labels for containers are included.

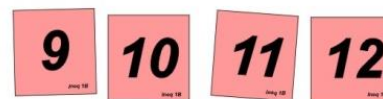
Put the cards that solve the inequality next to it.

Put cards from the replacement set that do not solve the inequality to the side.

"A" cards



"B" cards



"C" cards



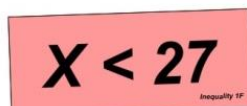
"D" cards



"E" cards



"F" cards



Number Theory (12 of 20)

(cardstock, reproducible blackline masters, & digital downloads)

Number Theory is a 20-exercise free-response taskcard series that includes prime and composite numbers, laws of divisibility, factors, prime factors, greatest common factor, multiples, least common multiple, exponents, simple radicals, and answer keys. All taskcards are available in all three formats.

Name _____

Date _____

- | | | |
|-----|-----------------------------|------------------|
| 1) | <i>Prime factors of 36</i> | $2^2 \times 3^2$ |
| 2) | <i>Prime factors of 48</i> | _____ |
| 3) | <i>Prime factors of 12</i> | _____ |
| 4) | <i>Prime factors of 49</i> | _____ |
| 5) | <i>Prime factors of 75</i> | _____ |
| 6) | <i>Prime factors of 32</i> | _____ |
| 7) | <i>Prime factors of 56</i> | _____ |
| 8) | <i>Prime factors of 84</i> | _____ |
| 9) | <i>Prime factors of 90</i> | _____ |
| 10) | <i>Prime factors of 96</i> | _____ |
| 11) | <i>Prime factors of 144</i> | _____ |
| 12) | <i>Prime factors of 125</i> | _____ |
| 13) | <i>Prime factors of 99</i> | _____ |
| 14) | <i>Prime factors of 112</i> | _____ |
| 15) | <i>Prime factors of 120</i> | _____ |
| 16) | <i>Prime factors of 128</i> | _____ |
| 17) | <i>Prime factors of 200</i> | _____ |
| 18) | <i>Prime factors of 164</i> | _____ |
| 19) | <i>Prime factors of 150</i> | _____ |
| 20) | <i>Prime factors of 16</i> | _____ |

Number Theory 12

Decimal Line and Tags

Your set includes two separate sets of decimal lines and tags as well as a set of decimal numeral cards.

Because Montessori hundreds and hundredths are red, the red line and tags with red numerals is for two-place decimals. Because Montessori thousands and thousandths are green, the green line and tags with green numerals is for three-place decimals. There is a set of adhesive organizational labels and a set of blue “tenths” tags for each line. Some teachers store the two sets of tags separately, while other teachers save shelf space and containers by storing them together.

The decimal numeral cards may be used with either set or with any other decimal materials in the classroom.

Also included are two pages of blank tags and a decimal grid for extensions. These are not laminated and can be photocopied when additional copies are needed.

Preparation

- Laminate all pages except for the blank labels and decimal grid.
- Each of the red pages and green pages has four sections separated by dashed lines. Cut along the dashed markings on each page. For each line, butt 10 sections end-to-end and secure both sides with clear packing tape. Leave a small space between the sections before taping to facilitate folding the lines accordion-style for storage. Retain the two leftover sections for each line for extensions or replacement pieces.
- Eight separate exercises are included for each line (a, b, c ... h) There are enough blue tags to include with each exercise if the teacher so chooses, or she or he may place one of two sets of blue tags in a separate container and use the extras for replacement parts. Cut and sort the tags according to letter. Label the containers or drawers with the appropriate adhesive label included with the sets.
- The unlaminated blank tags and decimal grid may be photocopied as needed for children to write on.

Decimal Numeral Cards

Decimal are extremely helpful in discovering the meaning and value of decimal fractions.

0.3 0.07 0.005

0.4 0.00 0.000

0.375

0.400

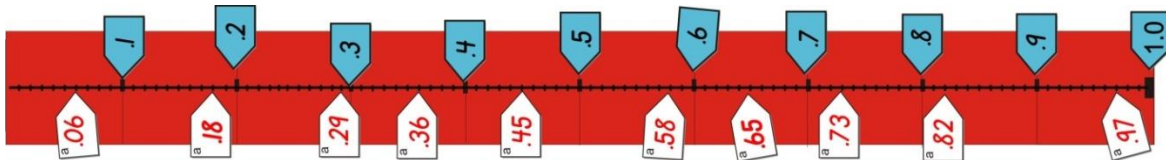
Adding zeros after the significant digits of a decimal fraction does not change its value.

Decimal equivalencies

In advance of challenging exercises, it would be helpful to guide the student in discovering decimal equivalence. An example is that 0.4, .4, 0.40, .40, 0.400, and .400 all have the same value.

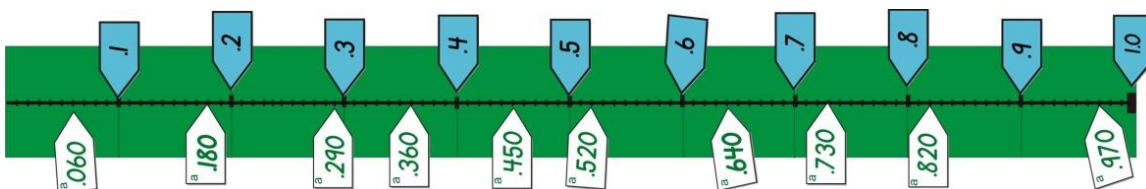
Hundredth line and tags

The student progresses sequentially through each drawer. It is important for the child to understand that adding a zero to the end of a one-place decimal fraction does not change its value. This concept is helpful when sequencing a mixture of one- and two-place decimals.



Thousandth line and tags

The student progresses through each drawer. The last several exercises are challenging. It might be helpful for the child to visualize adding enough zeroes to one and two-place decimals to bring them to three digits.



Decimal Order

(6 of 10)

0.001 <small>Decimal Order 6A</small>	0.01 <small>Decimal Order 6A</small>	0.1 <small>Decimal Order 6A</small>	1 <small>Decimal Order 6A</small>	10 <small>Decimal Order 6A</small>	100 <small>Decimal Order 6A</small>
---	--	---	---	--	---

.005 <small>Decimal Order 6B</small>	.05 <small>Decimal Order 6B</small>	.5 <small>Decimal Order 6B</small>	5 <small>Decimal Order 6B</small>	50 <small>Decimal Order 6B</small>	500 <small>Decimal Order 6B</small>
--	---	--	---	--	---

0.032 <small>Decimal Order 6C</small>	0.32 <small>Decimal Order 6C</small>	3.2 <small>Decimal Order 6C</small>	32 <small>Decimal Order 6C</small>	320 <small>Decimal Order 6C</small>	3200 <small>Decimal Order 6C</small>
---	--	---	--	---	--

.513 <small>Decimal Order 6D</small>	5.13 <small>Decimal Order 6D</small>	51.3 <small>Decimal Order 6D</small>	513 <small>Decimal Order 6D</small>	5130 <small>Decimal Order 6D</small>	51300 <small>Decimal Order 6D</small>
--	--	--	---	--	---

Decimal sequencing cards are four separate sequences of six decimal values ordered from least to greatest. Incremented by level of difficulty, the set includes 10 separate exercises – each printed on a separate sheet. Organizational labels for containers and answer keys are included. All manipulative cardstock work requires lamination and cutting.

Decimal Order reproducible masters and digital downloads have the same problems as the matching cards, but come in a free-response worksheet format on which children record their own answers.









	Name _____	Date _____
10 1 0.1	0.001 <small>Decimal Order 6A</small>	0.01 <small>Decimal Order 6A</small>
.5 50 .05	.005 <small>Decimal Order 6B</small>	5 <small>Decimal Order 6B</small>
3200 0.032 320	0.32 <small>Decimal Order 6C</small>	3.2 <small>Decimal Order 6C</small>
51.3 5.13 5130	.513 <small>Decimal Order 6D</small>	513 <small>Decimal Order 6D</small>
100	100 <small>Decimal Order 6A</small>	500 <small>Decimal Order 6B</small>
32	32 <small>Decimal Order 6C</small>	51300 <small>Decimal Order 6D</small>

Student is to select appropriate decimal (left of each row) to sequence numbers from least to greatest.

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Problem Solving Match

Levels A, B, C, D, and E

1st  Problems E16	2nd Plane flies 1554 miles from Houston to Los Angeles in 3 hours. What is its cruising speed? Problems E16	3rd 552 miles per hour Problems E16
1st  Problems E16	2nd Shuttle flies 18,000 miles per hour. How far does it fly in a second? Problems E16	3rd 5 miles Problems E16
1st  Problems E16	2nd It flies 48 miles from Houston to Galveston in 3 hours. What is its cruising speed? Problems E16	3rd 16 mph Problems E16
1st  Problems E16	2nd Acela travels from Boston to New York in 3 hrs. How many miles does it average per hour? Problems E16	3rd 70 miles Problems E16
1st 45 miles per gal  Problems E16	2nd Motorcycle has 6.3 gallon tank. How far does it travel on one tank? Problems E16	3rd 283.5 miles Problems E16
1st  Problems E16	2nd Boat travels 36 mph for two hours. How far does it go? Problems E16	3rd 72 miles Problems E16
1st Speed limit 60 mph  Problems E16	2nd How long does it take for bus to travel 200 miles from Houston to San Antonio? Problems E16	3rd $3\frac{1}{3}$ hours Problems E16
1st 143 MPH  Problems E16	2nd How long does it take to complete 500-mile Indianapolis race? Problems E16	3rd 3.5 hours Problems E16

Problem Solving Matching cards are printed with black ink on colored cardstock. The "1st card" can be placed in any order, but the "2nd" and "3rd" cards must be placed with the appropriate question cards. Level E is printed on lavender cardstock which is to be laminated and cut. Problem Solving E has 20 exercises, an answer key, and organization labels for containers.

Problem Solving reproducible masters come in a free-response worksheet format on which children record their own answers. Reproducible blacklines come in black ink on white paper, but digital downloads which will be available in fall 2019 may be printed either in black and white or in color depending on the user's printer.

Name _____		Date _____	
1st  Problems E16	2nd Plane It flies 1554 miles from Houston to Los Angeles in 3 hours. What is its cruising speed? Problems E16	3rd 552 miles per hour	
1st  Problems E16	2nd Shuttle flies 18,000 miles per hour. How far does it fly in a second? Problems E16	3rd	
1st  Problems E16	2nd It flies 48 miles from Houston to Galveston in 3 hours. What is its cruising speed? Problems E16	3rd	
1st  Problems E16	2nd Acela travels from Boston to New York in 3 hrs. How many miles does it average per hour? Problems E16	3rd	
1st 45 miles per gal  Problems E16	2nd Motorcycle has 6.3 gallon tank. How far does it travel on one tank? Problems E16	3rd	
1st  Problems E16	2nd Boat travels 36 mph for two hours. How far does it go? Problems E16	3rd	
1st Speed limit 60 mph  Problems E16	2nd How long does it take for bus to travel 200 miles from Houston to San Antonio? Problems E16	3rd	
1st 143 MPH  Problems E16	2nd How long does it take to complete 500-mile Indianapolis race? Problems E16	3rd	

Insights Into Math Concepts Conceptual Learning Materials www.conceptuallearning.com Copyright 2006 Dianne M. Knesek Problems E WS 16

More Advanced Numeration

(cardstock, reproducible blackline masters, & digital downloads)

More Advanced Numeration is a full-page 20-exercise taskcard set involving numeration concepts for the older student: place value of larger numbers, expanded form, powers of 10, decimal concepts, scientific notation with positive and negative exponents, and answer key. All taskcard series are available in all three formats.

Name _____ Date _____

- 1) $3.4 \times 10^2 = \underline{\underline{340}}$
- 2) $1.5 \times 10^2 = \underline{\hspace{2cm}}$
- 3) $9.6 \times 10^3 = \underline{\hspace{2cm}}$
- 4) $2.7 \times 10^2 = \underline{\hspace{2cm}}$
- 5) $4.8 \times 10^0 = \underline{\hspace{2cm}}$
- 6) $9.7 \times 10^2 = \underline{\hspace{2cm}}$
- 7) $8.6 \times 10^1 = \underline{\hspace{2cm}}$
- 8) $7.5 \times 10^0 = \underline{\hspace{2cm}}$
- 9) $2.5 \times 10^3 = \underline{\hspace{2cm}}$
- 10) $4.8 \times 10^2 = \underline{\hspace{2cm}}$
- 11) $1.5 \times 10^3 = \underline{\hspace{2cm}}$
- 12) $2.5 \times 10^2 = \underline{\hspace{2cm}}$
- 13) $7.7 \times 10^0 = \underline{\hspace{2cm}}$
- 14) $3.3 \times 10^3 = \underline{\hspace{2cm}}$
- 15) $5.5 \times 10^1 = \underline{\hspace{2cm}}$
- 16) $3.5 \times 10^2 = \underline{\hspace{2cm}}$
- 17) $9.3 \times 10^0 = \underline{\hspace{2cm}}$
- 18) $1.6 \times 10^3 = \underline{\hspace{2cm}}$
- 19) $2.9 \times 10^1 = \underline{\hspace{2cm}}$
- 20) $4.4 \times 10^2 = \underline{\hspace{2cm}}$

More Advanced Numeration 10

Equivalence

4 of 10

Equivalence matching cards matches fraction, decimals, and some commonly used percentages. They are printed with black ink on colored cardstock. The “1st card” can be placed in any order, but the “2nd” and “3rd” cards must be placed with the appropriate question cards. Another option is to use the 1st card as a free-response exercise and the remaining cards as a control. Equivalence has 10 exercises, an answer key, and organization labels for containers.

1st $\frac{1}{20}$ Equivalence 4	2nd $\frac{5}{100}$ Equivalence 4	3rd .05 Equivalence 4
1st $\frac{1}{10}$ Equivalence 4	2nd $\frac{10}{100}$ Equivalence 4	3rd .10 Equivalence 4
1st $\frac{1}{50}$ Equivalence 4	2nd $\frac{2}{100}$ Equivalence 4	3rd .02 Equivalence 4
1st $\frac{1}{25}$ Equivalence 4	2nd $\frac{4}{100}$ Equivalence 4	3rd .04 Equivalence 4
1st $\frac{1}{4}$ Equivalence 4	2nd $\frac{25}{100}$ Equivalence 4	3rd .25 Equivalence 4
1st $\frac{1}{2}$ Equivalence 4	2nd $\frac{5}{10}$ Equivalence 4	3rd .5 Equivalence 4
1st $\frac{1}{5}$ Equivalence 4	2nd $\frac{2}{10}$ Equivalence 4	3rd 0.2 Equivalence 4
1st $\frac{4}{5}$ Equivalence 4	2nd $\frac{8}{10}$ Equivalence 4	3rd .8 Equivalence 4

Name _____ Date _____ 4

Follow the example given to complete the fraction/decimal equivalency chart.

$\frac{1}{20}$	$\frac{5}{100}$.05
$\frac{1}{10}$	$\frac{\quad}{100}$.10
$\frac{1}{50}$	$\frac{\quad}{100}$	
$\frac{1}{25}$	$\frac{\quad}{100}$	
	$\frac{25}{100}$.25
	$\frac{5}{10}$	
	$\frac{\quad}{10}$	0.2
	$\frac{8}{10}$	


Equivalence reproducible masters and digital downloads come in a free-response worksheet format on which children record their own answers. They have the same problems as their cardstock counterparts.

Percent


(cardstock, reproducible blackline masters, & digital downloads)

Percent is a step-by-step 20-exercise series that introduces concept of percent and encourages intuition in its application. First 10 exercises emphasize fractional equivalents through conversions, percent of a number, estimation, probability, and shipping costs. Second half of the set introduces decimal conversions comparison of values in different formats, simple interest, seeking easier approach to applications, word problems, and cumulative exercises. All taskcards are available in all three formats.

Name _____ Date _____



1) What percentage of the star is shaded? _____
 2) What percentage of the star is unshaded? _____



3) What percent of marbles are black? _____
 4) What percent of marbles are not black? _____
 5) What percent of marbles are spotted? _____

6) Three out of four kids participate in some activity outside of school. What percent is this? _____

7) Emma got 45 out of 50 questions correct. What percent did she get? _____

8) Three out of five kids have keyboarding skills. What percent is this? _____

9) The Tigers won 12 of their 16 games. What percent did they win? _____

10) Lance got 6 hits out of 20 "at bats." What percentage did he hit? _____

11) Rachel sold 17 out of her 20 craft items. What percentage did she sell? _____

12) Henry read 21 of the 50 books on the reading list. What percentage did he read? _____

Lunch order

- 15 slices of pizza
- 20 hot dogs
- 13 hamburgers
- 12 macaroni & cheese

13) What percent ordered pizza? _____
 14) What percent ordered hot dogs? _____
 15) What percent ordered mac & cheese? _____

Percent 5

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Name _____ Date _____


Many percents can be changed to a commonly used fraction (See Percent 4). In such a case, the easiest way to find percent of a number is to change the percent to a fraction and multiply.

1) 50% of 12 = $\frac{1}{2}$ of 12 = 6 11) 25% of 60 = _____
 2) 25% of 12 = _____ 12) 20% of 60 = _____
 3) $33\frac{1}{3}\%$ of 12 = _____ 13) 75% of 24 = _____
 4) 75% of 12 = _____ 14) $12\frac{1}{2}\%$ of 24 = _____
 5) 50% of 30 = _____ 15) $37\frac{1}{2}\%$ of 24 = _____
 6) 10% of 30 = _____ 16) $33\frac{1}{3}\%$ of 24 = _____
 7) 60% of 30 = _____ 17) 100% of 20 = _____
 8) $33\frac{1}{3}\%$ of 30 = _____ 18) 60% of 20 = _____
 9) 30% of 60 = _____ 19) 75% of 20 = _____
 10) $66\frac{2}{3}\%$ of 60 = _____ 20) 150% of 20 = _____

Percent 6

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Tax is 10%



Shipping and handling: 20%

For this exercise, compute tax and shipping separately

Calculate tax for:	Calculated shipping & handling for:
1) Music CD _____	7) Music CD _____
2) Basketball _____	8) Basketball _____
3) Skateboard _____	9) Skateboard _____
4) MP3 player _____	10) MP3 player _____
5) Shirt _____	11) Shirt _____
6) Baseball glove _____	12) Baseball glove _____

If tax is 5%, what is the total cost of a \$20 shirt? \$21
 ($\frac{1}{20}$ of \$20 = \$1 The shirt costs \$20, and the tax is \$1, so the total cost is \$21.)


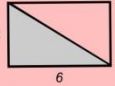
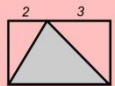
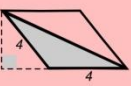
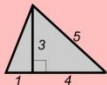
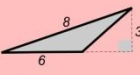
13) If tax is 10%, what is the total cost of a \$30 game? _____
 14) If shipping is 20%, what is the total for a \$25 MP3 player? _____
 15) If shipping is 15%, what is the total cost for \$100 book order? _____
 16) If shipping is $12\frac{1}{2}\%$, what is the total for a \$24 pair of jeans? _____
 17) If tax is 5%, what is the total cost of a \$60 desk? _____
 18) If shipping is 20%, what is the total for a \$40 skateboard? _____

Percent 9

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Geometry Intermediate

2 of 15


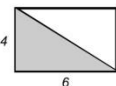
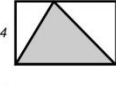
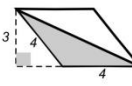
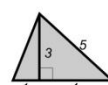
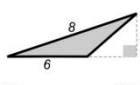
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of 16 sq units <small>Intermediate Geometry 2</small>	3rd 8 units^2 <small>Intermediate Geometry 2</small>
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of 24 sq units <small>Intermediate Geometry 2</small>	3rd 12 units^2 <small>Intermediate Geometry 2</small>
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of (5×4) <small>Intermediate Geometry 2</small>	3rd 10 units^2 <small>Intermediate Geometry 2</small>
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of (3×4) <small>Intermediate Geometry 2</small>	3rd 6 units^2 <small>Intermediate Geometry 2</small>
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of (5×3) <small>Intermediate Geometry 2</small>	3rd $7\frac{1}{2} \text{ units}^2$ <small>Intermediate Geometry 2</small>
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of (6×3) <small>Intermediate Geometry 2</small>	3rd 9 units^2 <small>Intermediate Geometry 2</small>

Cardstock version

Appropriate for grades 5-8, *Geometry Intermediate* matching cards cover a wide range of skills: angles in a triangle; perimeter, area, & volume; circle terminology, circumference, and area; parallel lines, transversal, and angle measurements; solid figures, prisms, surface area, and Pythagorean Theorem. The 15-exercise set also includes answer keys and organization labels for containers.

Reproducible Blackline or Digital PDF Download

Geometry Intermediate reproducible blackline masters and digital PDF downloads are free-response workpages that correspond to the cardstock counterparts.

Name _____		Date _____	
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of 16 sq units <small>Intermediate Geometry 2</small>	3rd 8 units^2 <small>Intermediate Geometry 2</small>	
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of _____ <small>Intermediate Geometry 2</small>	3rd A = _____ <small>Intermediate Geometry 2</small>	
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of _____ <small>Intermediate Geometry 2</small>	3rd A = _____ <small>Intermediate Geometry 2</small>	
1st  <small>Intermediate Geometry 2</small>	2nd $\frac{1}{2}$ of _____ <small>Intermediate Geometry 2</small>	3rd A = _____ <small>Intermediate Geometry 2</small>	
1st  <small>Intermediate Geometry 2</small>	2nd _____ <small>Intermediate Geometry 2</small>	3rd A = _____ <small>Intermediate Geometry 2</small>	
1st  <small>Intermediate Geometry 2</small>	2nd _____ <small>Intermediate Geometry 2</small>	3rd A = _____ <small>Intermediate Geometry 2</small>	

Advanced Decimals

(cardstock, reproducible blackline masters, & digital downloads)

Advanced Decimals is a step-by-step 20-exercise series that includes all concepts for understanding decimals for older students. Included are place value of decimals with multiple places, more difficult fraction and decimal equivalents, negative powers of 10, ordering decimal and fraction combinations, rounding, decimal placement in operations, percent, and answer keys.

Name _____ Date _____

Indicate $>$, $<$, or $=$.

- | | | | |
|-----|------------------------------------|-------|-----------------------------------|
| 1) | 0.004 | _____ | 0.4 |
| 2) | 1.7 | _____ | 1.698 |
| 3) | 0.257 | _____ | 0.26 |
| 4) | 0.6 | _____ | 0.60 |
| 5) | 2.07 | _____ | 2.70 |
| 6) | 9.8 | _____ | 9.80 |
| 7) | 2.5 | _____ | $2\frac{6}{10}$ |
| 8) | $5\frac{7}{10}$ | _____ | 5.07 |
| 9) | 0.680 | _____ | .6800 |
| 10) | $\frac{1}{10}$ | _____ | .01 |
| 11) | $\frac{2}{1000}$ | _____ | .002 |
| 12) | .00030 | _____ | .003 |
| 13) | $8\frac{1}{2}$ | _____ | 8.2 |
| 14) | .5 | _____ | $\frac{1}{5}$ |
| 15) | $\frac{99}{100}$ | _____ | 9.9 |
| 16) | $\frac{5}{1000}$ | _____ | .0005 |

Advanced Decimals 10

Advanced Geometry

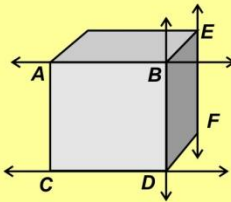
(cardstock, reproducible blackline masters, & digital downloads)

Advanced Geometry is a comprehensive free-response 30-exercise packet that includes all concepts for grades 6-8 and readies students for high school geometry. It includes transversals, angles, triangles, quadrilaterals, polygons, perimeter, area, composite area, volume, and composite volume of most plane and solid figures. It goes on to explore Pythagorean Theorem, similar figures, proportion, all four quadrants of the coordinate system, translations, reflections, problem solving, and answer keys. All taskcards are available in all three formats.

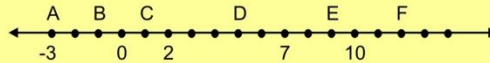
Name _____ Date _____

Basic vocabulary

- 1) Set of all points _____
- 2) Specific location in space _____
- 3) Flat surface extending in all directions without end: _____
- 4) Straight path that extends forever without end _____
- 5) Shortest distance between two points _____
- 6) Straight path with only one endpoint _____
- 7) Lines in the same plane that never meet _____
- 8) Lines in the same plane that meet _____
- 9) Lines that meet at right angles _____
- 10) Lines in two different planes _____



- 11) What is the intersection of \overleftrightarrow{AB} & \overleftrightarrow{DB} ? _____
- 12) Name a line that is parallel to \overleftrightarrow{CD} . _____
- 13) Name a line perpendicular to \overleftrightarrow{AB} _____
- 14) Name a skew line to \overleftrightarrow{CD} _____
- 15) Name two rays _____
- 16) Name two planes _____
- 17) What is the intersection of \square{ACD} & \square{BEF} ? _____



Find the length

- 18) $\overline{AB} = 2$ $\overline{BD} =$ _____ $\overline{EF} =$ _____ $\overline{CD} =$ _____
- 19) $\overline{AB} + \overline{DE} =$ _____ $\overline{CE} - \overline{DE} =$ _____ $\overline{DE} - \overline{CD} =$ _____ $\overline{AF} - \overline{DE} =$ _____

Name the segment

- 20) $\overline{AB} + \overline{BD} = \overline{AD}$ $\overline{AC} - \overline{AB} =$ _____ $\overline{DF} - \overline{EF} =$ _____ $\overline{AE} - \overline{AD} =$ _____
- 21) $\overline{AB} + \overline{DE} =$ _____ $\overline{CE} + \overline{DE} =$ _____ $\overline{CF} - (\overline{DE} + \overline{CD}) =$ _____

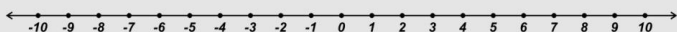
Advanced Geometry 1

Operations with Negatives

Operations with Negatives is a 20-exercise introduction of negative integers and rationals with number line and counters. It addresses addition, subtraction, multiplication, and division with counters and number lines. It goes on to explore division as the inverse of multiplication. The series also includes absolute value, rules for all four operations, logic, order of operations, mixed practice, word problems, and answer keys. All taskcards are available in all three formats.

Name _____ Date _____

The set of integers includes the counting numbers 1, 2, 3, 4 , 0, and negatives of the counting numbers -4, -3, -2, -1. Just as there is no last whole number, there is no last negative integer. For that reason, a number line of integers has an arrow at both ends.



Positive and negative numbers can be written many ways. For example, four more than zero may be written as positive 4, +4, or merely 4. Four less than zero may be written as negative 4, -4 or -4 .

Tell whether the following numbers are integers.

- | | | |
|---------------------|------------------------|-------------------------|
| 1) Positive 2 _____ | 2) $\frac{1}{8}$ _____ | 3) Negative 5 _____ |
| 4) $+.19$ _____ | 5) 6.00 _____ | 6) -25 _____ |
| 7) +10,235 _____ | 8) $\frac{4}{5}$ _____ | 9) $-\frac{9}{3}$ _____ |

Which is more?

- | | | |
|-------------------|--------------------------|---------------------|
| 10) 5 or +4 _____ | 11) -5 or -4 _____ | 12) 1 or -2 _____ |
| 13) 0 or -1 _____ | 14) -20 or -30 _____ | 15) -10 or 10 _____ |

>, <, or =

- | | | |
|-----------------------|-----------------------|---------------------|
| 16) -3 _____ 0 | 17) $+2$ _____ -2 | 18) -3 _____ -2 |
| 19) -15 _____ -30 | 20) -13 _____ -16 | 21) $+2$ _____ 2 |

Name the integer that is

- | | |
|----------------------------|----------------------------|
| 22) 3 more than +2 _____ | 23) 3 more than -5 _____ |
| 24) 3 more than 0 _____ | 25) 3 more than -3 _____ |
| 26) 6 less than $+2$ _____ | 27) 6 less than -10 _____ |

Negatives 1

Name _____ Date _____

What if you are subtracting, but there are not enough counters to take away. You merely add zeroes until you have enough.

Consider the problem $+2 - +5 =$

But there are not enough positives to subtract. An easy way is to add 5 zeroes and then subtract positive 5.

Subtracting 5 is the same as adding -5 .

$$+2 - +5 = +3 \text{ is the same as } +2 + -5 = -3$$

Use counters or pictures to give the following results.

- $+2 - +3 =$ $+2 - +3 =$ _____
- 1) $+1 - +4 =$ _____
- 2) $-2 - -3 =$ _____

Use counters or pictures to give the following differences. Write only the answers.

- | | |
|----------------------|-----------------------|
| 3) $+1 - +3 =$ _____ | 4) $-1 - -3 =$ _____ |
| 5) $-2 - -6 =$ _____ | 6) $+2 - +4 =$ _____ |
| 7) $-4 - -5 =$ _____ | 8) $-2 - -5 =$ _____ |
| 9) $+1 - +7 =$ _____ | 10) $-3 - -8 =$ _____ |

Negatives 8

Name _____ Date _____

Simplify the following expressions

- | | |
|-------------------------------------|--|
| 1) $25 + -2 =$ _____ | 2) $17 - -8 =$ _____ |
| 3) $(-3)(5 + 4) =$ _____ | 4) $- \frac{-15}{3} =$ _____ |
| 5) $(5 - 7)(6 + 2) =$ _____ | 6) $-2(-5)^2 =$ _____ |
| 7) $ -8 \cdot -2 \cdot -1 =$ _____ | 8) $- 7 + +4 =$ _____ |
| 9) $(-3)^2(-1)^3 =$ _____ | 10) $-\frac{3}{4} \times -\frac{2}{9} \div -\frac{2}{3} =$ _____ |
| 11) $(-3)^3 + (-1)^2 =$ _____ | 12) $(-1 - -3)^3 =$ _____ |
| 13) $-15 \cdot -2 =$ _____ | 14) $\frac{(8-12)}{-2} =$ _____ |

>, <, or =

- | | | |
|--------------------------------|--|--|
| 15) $ -3 $ _____ $- 3 $ | 16) $(-2)^3$ _____ $(-3)^2$ | 17) $- 4 + 3 $ _____ -2 |
| 18) $- 15 $ _____ $-3 \cdot 5$ | 19) $\frac{-1.8}{-.03}$ _____ $\frac{-1.8}{.03}$ | 20) $- 2 \cdot 3 $ _____ $(-2 \cdot -3)$ |

Sometimes, always, or never?

- The square of a number is less than its cube. _____
- The sum of the absolute value of two numbers is positive. _____
- The product of three negative values is positive. _____
- The temperature in Skagway is 4 degrees Celsius. Over the weekend it is expected to get 9 degrees colder. What is the predicted temperature? _____
- A running back gained an average of 4 yards per carry for 5 plays. The quarterback passed for an additional 30 yards. The team was penalized -35 yards. What was the net gain? _____

Negatives 20

Order of Operations

Name _____ Date _____

Evaluate the following expressions.

1) $6(8 - 2) =$ _____ 2) $15 + (3 \cdot 2) - 6 =$ _____

3) $(15 + 3) \times (2 - 6) =$ _____ 4) $5 + |8 - 9| =$ _____

5) $3|^{-}8 \cdot 2|$ _____ 6) $(4 + 3)(2 - 6)(1 + 9) =$ _____

7) $(35 - 25) 4 =$ _____ 8) $(10 + 8) \div 3 =$ _____

9) $(50 + 6) \div (8 - 1) =$ _____ 10) $(9 \cdot 7) - (2 \cdot 3) =$ _____

11) $(48 - 8) \div 5 =$ _____ 12) $8(4) \div 2 =$ _____

13) $(5 - 1 + 2 - 6) 248 =$ _____ 14) $|7 - 8| \times |8 - 7| =$ _____

15) $15 |1 - ^{-}3| =$ _____ 16) $9(6 - 5 + 8 - 9 + 1) =$ _____

17) $(5^2) + (1^2) =$ _____ 18) $(10^2) (5 + 5) =$ _____

Order of Operations 2

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Order of Operations is appropriate after students understand operations with negatives. The 10-exercise series applies absolute value, grouping symbols, mixed operations without grouping symbols, variables representing specific values, numerators and denominators, and word problems. Taskcards are available in all three formats and include answer keys.

Name _____ Date _____

When addition, subtraction, multiplication, and/or division are used together, always do multiplication and division first. Enclosing multiplication or division within your own grouping symbol will help you remember which comes first.

$5 + 3 \times 4 + 2 =$
 $5 + (3 \times 4) + 2 =$
 $5 + 12 + 2 =$
 19

1) $3 \times 1 + 6 + 8 =$ _____ 2) $(5 + 10 \times 2) \div 5 =$ _____

3) $2 \times 3 + 6 - 5 \times 2 =$ _____ 4) $5^2 - 3 \cdot ^{-}6 + 2 =$ _____

5) $2 + 5 \cdot 3 + 6 \cdot 4 =$ _____ 6) $-3 + 2 \cdot 4 \cdot 3 - 3 =$ _____

7) $9 + 6 \div 3 + 2 \div 2 =$ _____ 8) $10 \div 3 + 2 \cdot 5 =$ _____

Order of Operations 6

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Name _____ Date _____

Simplify the following expressions

1) $5 + 2 \times 6 - 9 =$ _____ 2) $-5^2 + 3 =$ _____

3) $5(-3)^0 + 4 =$ _____ 4) $-|^{-}15/3| - 5 =$ _____

5) $5 - (6 + 2) =$ _____ 6) $3 + 4 \cdot 2^3 =$ _____

7) $|^{-}8 \cdot ^{-}2 - ^{-}1| =$ _____ 8) $6 - [2 - (-5)] 3 =$ _____

9) $2^3 \cdot 2^1 \cdot 2^2 \cdot 2^0 =$ _____ 10) $\frac{2}{3} - \frac{3}{4} \cdot \frac{2}{9} =$ _____

11) $-2^3 - 3 - (-2)^2 =$ _____ 12) $2[(-3 + 4)(-1 - 2)] - 2 =$ _____

13) $\frac{5(2 + 3^0 + 6)}{3^2 - 2 \cdot 3} =$ _____ 14) $\frac{(8 - 12)^2}{2 + 6 \cdot 3} =$ _____

Evaluate the following if $m = 2$, $n = ^{-}1$, and $p = 3$.

15) $m + n \cdot p =$ _____

16) $n[mp(1 - n^0) - 3] =$ _____

17) $\frac{p^2 - |m + n \cdot 2|}{mnp^2} =$ _____

18) Add 3 and 2. Square the result and then add 5. Multiply that result by 4.
 $[(3 + 2)^2 + 5] 4 =$ _____

19) Square 4. Subtract 6 from the result. Then multiply by 7.

20) Add the absolute value of ^{-}6 to the square of the sum of 3 and 4. Divide that answer by the sum of 5 and 6.

Order of Operations 10

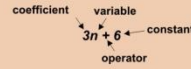
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Algebra Concepts

Algebra Concepts emphasizes prerequisite skills for solving algebraic equations: classification of numbers as reals, rational or irrational, integers, whole numbers, and/or natural numbers. It also includes variables, constants, verbal and algebraic equivalents, and computing the value of algebraic expressions. It concludes with distributive property, combining like-terms, multiplying and dividing terms with exponents, a cumulative review, and answer keys. The 10-exercise series is available in reusable cardstock, reproducible blackline masters, and digital PDF downloads.

Name _____ Date _____

Parts of an algebraic expression



Constant: a number that stands alone (always represents the same value)
 Variable: a value that changes in different situations (often represented by a letter)
 Coefficient: A number right before a variable. (Multiplier that tells how many times to count the variable; if variable has no coefficient, it is understood to be one)

Terms are groups of variables, coefficient/variable combinations, or constants. Terms are separated by + or -. The expression $2a^2 - 4b + c + 6$ has four terms: $2a^2$, $4b$, c , and 6 .

Identify the terms in the following expressions.

- 1) $4x - 3$ $4x, 3$ 2) $2a + 3b$ 3) $x^2 + 2xy + y^2$
 4) $5p - 3q$ 5) $6y^2 - 3y + 8$ 6) $\frac{3}{4}z + 2$
 7) $\frac{p}{q} + 6$ 8) $-m + mn - 1$ 9) $12 + b^3 + 7$

It is desirable to combine terms that are alike. Consider the expression $3a + 4b + 3b + a$. We can add the a's together to get $4a$, and the b's together to get $7b$. The expressions can be rewritten as $4a + 7b$. Combine like terms below.

- 10) $3x - y + x + 5$ 11) $4a + 3b + 6 + a - b$ 12) $\frac{1}{2}p + 6q + \frac{1}{2}p$
 13) $m^3 + 2n + 4 + m^3$ 14) $\frac{1}{2}r + 2d + 3 + 3d$ 15) $.5x + y + 1.2x + .002x$

Variables with exponents must have the same base and same exponent to be combined. For example $2x^2 + 3x^2$ can be combined, but $2x^2$ and $3x$ or $2x^2$ cannot. Combine like terms in expressions below.

- 16) $(4x^2 + 8 - 2x + 2) + x^2$ 17) $5s^2 - s + 3s - s^2$ 18) $y^2 + 3y - y - 3$
 19) $3q^2 + q + 2 - 3q^2$ 20) $a^2 + ab + b^2 + a + 3a^2$

Name _____ Date _____

Real Numbers (R)

Rational (Q): can be fraction

$\frac{2}{3}$
 $-3\frac{2}{7}$
 0.25
 $0.\overline{6}$

Integer (Z): wholes + negatives of naturals

-4
 -9
 -35

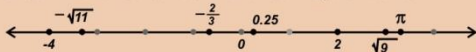
Whole numbers (W): naturals + 0

Natural numbers (N): Numbers you count with
 1 2 3 12 59 633 1,246,865

Irrational (I): cannot be fraction

$\sqrt{5}$ π
 $-\sqrt{11}$ $\sqrt{2}$

All numbers most people use are real numbers. They include counting numbers, zero, fractions, and all numbers in between. If a number can be on a number line, then it is real.



Remember that integers, wholes, and naturals have no fractional parts. Rationals include anything that can be turned into the ratio of a numerator and a denominator including integers, proper fractions, mixed numbers, terminating decimals, and repeating decimals. Decimals that do not terminate or repeat cannot be turned into an exact fraction and therefore are irrational.

Tell whether the following numbers belong to each classification.

R (Real), Q (Rational), I (Irrational), Z (Integer), W (Whole number), N (Natural number)

- 7 R Q I Z W N
 1) -5 R Q I Z W N
 2) $\sqrt{3}$ R Q I Z W N
 3) $0.\overline{63}$ R Q I Z W N
 4) $\sqrt{25}$ R Q I Z W N

Always, sometimes, or never

- 5) Real numbers are rational. _____
 6) Irrational numbers are real. _____
 7) Integers are negative. _____
 8) Negative integers are irrational. _____



Name _____ Date _____

R (Real), Q (Rational), I (Irrational), Z (Integer), W (Whole number), N (Natural number)

- 1) $\sqrt{5}$ R Q I Z W N
 2) 0 R Q I Z W N
 3) $0.\overline{3}$ R Q I Z W N

Consider the expression $4a^2 + 5b + 8$.

- 5) How many terms are there? _____ 6) List the terms. _____
 7) What are the constants? _____ 8) List the variables. _____
 9) List the exponents. _____ 10) What are the coefficients? _____

If $x = 3$, $y = -2$, and $z = 1$, find the value of each of the following expressions.

- 11) $x^2 + y^2 - yz =$ _____ 12) $x^2(y - yz) =$ _____ 13) $\frac{x^2 + y^2}{z^3 - 2} =$ _____

Write a verbal expression for the following algebraic expressions.

- 14) $\frac{cd}{4}$ _____
 15) $5(a + b)$ _____

Write an algebraic expression for the following:

- 16) Eight more than two times the square of some number n _____
 17) Five less than the ratio of p to q _____

Simplify by distributing or dividing to remove the parentheses; then combine like terms.

- 1) $2y^2 - 3(y - 2) + y - 4$ 2) $4x(x - 2) - (x - 1)$
 3) $\frac{8x^5}{4x^2} + \frac{3x^5 \cdot y}{y^2} - \frac{2x^3}{x}$ 4) $3n^3 + 5n(n^2 + 2n) - 6$
 5) $x^0(x^2 + 1) + \frac{3x^2}{x^2} + 2$ 6) $2a^2 + \frac{3a^4}{a^2} - 4a^2$

Algebra Equations

15-exercise taskcard set

Name _____ Date _____

We can use the concept of equality to figure out unknown quantities. Consider the equation to the right. I want to figure out what \square represents. In other words, I want to manipulate the equation until it shows that $\square =$ a constant.

The left side has $\square + \text{☹}$. I just want to know the value of \square , so I merely get rid of everything else. If I subtract a value from the left side I have to subtract the same value from the right side. It's easy to see that $\square = \text{☹☹☹}$.

Algebraic equations are based on maintaining equality or balance. You can perform any operation if you do the same to both sides (addition, subtraction, multiplication, division properties of equality).

1) $\square + \text{☹} = \text{☹☹☹}$
Subtraction property $\square =$ _____

2) $\square = \text{☹☹☹}$
Take half of each side. $n =$ _____

3) $\square - 1 = 3$
Add 1 to each side. $x =$ _____

4) $\frac{1}{2}n = 3$
Double each side. $n =$ _____

5) $b + \text{||||} = \text{||||}$
Subtraction property $b =$ _____

6) $a - 3 = 5$
Addition property $a =$ _____

7) $y + .2 = 0.8$
Subtraction property $y =$ _____

8) $\frac{1}{3}n = 2$
Multiplication property $n =$ _____

9) $\frac{1}{4}c = 4$
Multiplication property $c =$ _____

10) $3x = 12$
Division property $x =$ _____

Algebra Equations 2

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Name _____ Date _____

$x + 1 = 4$
 $-1 = -1$
 $x = 4 - 1$
 $x = 3$

$x - 3 = 5$
 $+3 = +3$
 $x = 5 + 3$
 $x = 8$

Simplify constants first. $x - (-8) = 1$
 $x + 8 = 1$
 $-8 = -8$
 $x = 1 - 8$
 $x = -7$

Isolate the variable by adding or subtracting the same value to both sides. Then solve.

1) $a - 6 = 8$
 $+6 = +6$
 $a = 8 + 6$
 $a = 14$

2) $x + 13 = 20$

3) $b - 7 = 20$

4) $y - 20 = 52$

5) $b + 1.4 = 5$

6) $5 + c = 4$

7) $d - 52 = -13$

8) $x + 3 = 1$

9) $14 = a - 2$

10) $0 = d + 5$

11) $y + 2^3 = 10$

12) $x - (-2) = 16$

13) $a + 0.01 = 1$

14) $b - \frac{1}{4} = \frac{1}{3}$

15) $x + \frac{1}{2} = .7$

16) $x - 3^1 = 0.5$

17) $q + 4^0 = 5$

18) $p + \frac{1}{3} = 6$

Algebra Equations 5

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Name _____ Date _____

Function charts follow a rule. For example, the following chart shows that the output y is 3 more than the input x . Since the input x can be anything, it is called an independent variable. Since the output y depends on what x is, it is called a dependent variable.

Rule: $y = x + 3$

Input (x)	Output (y)
0	3
1	4
-1	2
2	5
-4	-1

Input and output values can also be used to plot functions on a coordinate graph.

Use the given values on the function chart to determine the rule. Then complete the chart.

1)

Input (x)	Output (y)
0	0
1	2
2	4
-2	
-4	

 Rule: _____

2)

Input (x)	Output (y)
0	1
1	2
-1	0
2	
-4	

 Rule: _____

3)

Input (x)	Output (y)
2	0
5	3
-1	-3
-2	
0	

 Rule: _____

1)

Input (x)	Output (y)
2	4
-1	1
-3	9
0	
3	

 Rule: _____

2)

Input (x)	Output (y)
0	1
1	3
-1	-1
2	
-4	

 Rule: _____

3)

Input (x)	Output (y)
2	2
1	1.5
-1	.5
-2	
-4	

 Rule: _____

Algebra Equations 13

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Name _____ Date _____

Name the property being employed in the following algebraic steps.

1) $2(5a + 2b) = 10a + 4b$

2) $6x - 3 = 9$
 $6x = 9 + 3$

3) $\frac{3p}{4} = 20$
 $3p = 80$

Solve and check the following equations.

4) $3c - 4 = 4(2 + 3)$ Check

5) $\left(\frac{2y^2}{y}\right) = y + 1$ Check

Solve and check the following equations on separate paper. Then record the answer here.

6) $y + 3.4 = 2(5)$

7) $p - \frac{1}{2} = \frac{1}{4}$

8) $2(t - 1) = 6$

9) $5x = 12$

10) $3x + x = 24$

11) $2a + 3(a + 1) = 13$

12) $2(2q - 1) = q + 1$

13) $\frac{5x - 2}{3} = 6$

14) $\frac{a - 1}{2} = \frac{a}{3}$

15) Based on the function rule (equation), input values for x , and find the corresponding y value. Then plot the function on the graph.

$y = 2x + 1$

What are the variables? _____

What is the coefficient? _____

What is the constant? _____

What is the independent variable? _____

What is the dependent variable? _____

If x is -2, what is y ? _____

Algebra Equations 15

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