Horizons

Math

6

Contents

Count each individual answer as a separate point. The total for the test is 83 points. The student should achieve a score of 59 or more points to be ready to begin sixth grade. Be sure to note the areas of weakness even for those who score over 59 points.

1.
1. Rhombus –
2. Square –
3. Equilateral Triangle –
4. Scalene –
5. Isosceles –
6. Pentagon –
7. Hexagon –
8. Chord –
9. Octagon –
10. Prism –

2.
1. 18 cm²
2. 12 cm²
3. Front __18 cm²__ x 2 __36 cm²__
   Top __24 cm²__ x 2 __48 cm²__
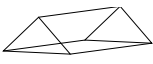   Side __12 cm²__ x 2 __24 cm²__
   Total 108 cm²

3. $\frac{15}{16}$ $2\frac{5}{8}$ $6\frac{8}{9}$ $14\frac{17}{24}$

$20\frac{26}{21} = 21\frac{5}{21}$ $17\frac{10}{8} = 18\frac{2}{8} = 18\frac{1}{4}$

$102\frac{67}{40} = 103\frac{27}{40}$

$128\frac{12}{9} = 129\frac{3}{9} = 129\frac{1}{3}$

4. 21 9 20 36

5. $\frac{12}{35}$ $\frac{25}{96}$

$\frac{28}{27} = 1\frac{1}{27}$ $\frac{55}{8} = 6\frac{7}{8}$

$\frac{7}{12}$ $\frac{6}{5} = 1\frac{1}{5}$

$\frac{18}{2} = 9$ $\frac{4}{45}$

6.
1. $\overline{XY}$
2. $\overline{AB}$
3. $\overline{TX}$ or $\overline{TY}$
4. 3 cm

7.

Name of Figure	Triangular prism	Hexagonal pyramid	cube
Faces	5	7	6
Edges	9	12	12
Vertices	6	7	8

8.
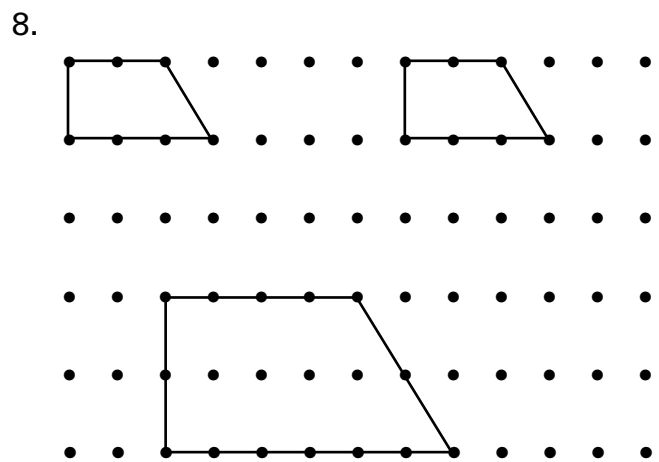
9. 53.4 2.43 0.66 54.18 30.66

10. 29.13 116.11 31.56 24.475

11.

Fraction	Decimal	Percent
$\frac{14}{100}$	0.14	14%
$\frac{62}{100}$	0.62	62%
$\frac{8}{100}$	0.08	8%
$\frac{19}{100}$	0.19	19%
$\frac{80}{100}$	0.80	80%
$\frac{75}{100}$	0.75	75%

12. 20 9 7 15

13. range = 73
mean = 35
mode = 11

Lesson 1

Concepts:

Numeration - trillions, two-digit addition, two-digit subtraction, angles, identifying fractions, column addition, mystery number.

Objectives:

1. The student will be able to identify place value through the trillions.
2. The student will be able to complete two-digit addition.
3. The student will be able to complete two-digit subtraction, using the regrouping process, if necessary.
4. The student will be able to identify, label, and draw acute, obtuse, and right angles.
5. The student will be able to complete column addition containing sets of one digit numbers.
6. The student will be able to identify a mystery number when given information about that number.
7. The student will be able to identify fractions.

Teaching Tips:

Place value should be a concept which all of the students have mastered. The addition of the Trillions Period should not be a difficult concept for them.

Materials, Supplies, and Equipment:

1. Place Value Chart (Large Teacher Chart for demonstration)
2. *Worksheet 1*

Activities:

1. Read **Lesson 1 Explanation** together. Discuss the fact the God created things in an orderly fashion. Just as God uses order, so does mathematics. The place value chart is a perfect example of this. Every number has a specific value based on its location in a number.
2. Review the place value chart using a large display model for demonstration. Prior to the lesson, make a place value chart out of poster board. This chart should go through the Trillions' columns. Remind the students that there is also a decimal side to the place value chart. An easy student reminder is that the whole number side is like green money while the decimal side is like change. You can visually demonstrate this by using two separate sheets of poster board. Use a green sheet for the whole number side and another color for the decimal side. When the two sheets are joined together, have a large black line and a decimal point separating the two. This visually indicates the separation of the whole and decimal sides of the chart. The chart can be laminated for further use. Simply use overhead markers during lessons. This ink will wipe off when you are done.
3. Complete the sample problems together to insure basic understanding. Review the different ways to write a number (written form, expanded form, & standard form).
4. The student should be able to complete **Lesson 1-1** independently.
5. Combining this lesson with a study of the Solar System would be interesting. The students can research the distance between the earth and the other planets in our solar system. This will give them concrete experience dealing with large numbers.
6. For review of **Lesson 1-4** (angles) refer to Lesson 32.
7 For review of **Lesson 1-6** (prime numbers) refer to Lesson 42.
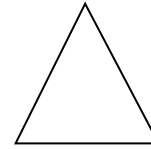
The prayer of a righteous man is powerful and effective.
James 5:16b
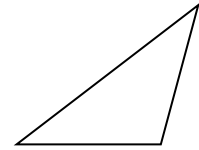
Triangles may be identified by their angles.

A triangle containing …
one angle equal to 90° is a **right** triangle.
all angles less than 90° is an **acute** triangle.
an angle more than 90° is an **obtuse** triangle.
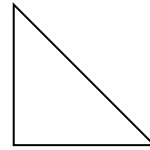
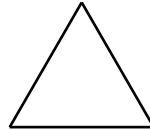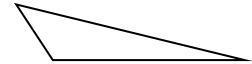right   acute   obtuse

Triangles may be identified by their sides.

A triangle containing …
3 equal sides is an **equilateral** triangle.
2 equal sides is an **isosceles** triangle.
no equal sides is a **scalene** triangle.
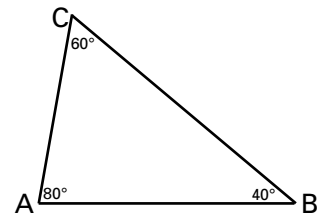
isosceles   scalene

equilateral

(1) **Identify the first row of triangles as (R) right, (A) acute, or (O) obtuse, and the second row of triangles as (E) equilateral, (I) isosceles, or (S) scalene.**

a.

_____ _____ _____ _____ _____ _____

b.

_____ _____ _____ _____ _____ _____

(2) How many angles are there in a triangle? _____

The angles of triangle ABC measure _____°,_____°, and _____°

The sum of the angles of triangle ABC is equal to _____°

C 60°
A 80°   40° B

Using a protractor, we can measure the angles of any given triangle.
No matter what triangle is drawn, the sum of the angles will always be 180°.

(3) Can a triangle have two right angles? _____   two obtuse angles? _____

Why not? _____

(4) **Answer the questions.**

a. What is the measure of *each* angle of an equilateral triangle?   _____

b. An isosceles triangle has one angle that measures 30°.
What is the measure of the other two angles that are equal?   _____

c. A scalene triangle has angles of 53° and 69°
What is the measure of its third angle?   _____

1 Write the value of each digit.

100,005,000,800,900.23674

1 _____

5 _____

8 _____

9 _____

2 _____

3 _____

6 _____

7 _____

4 _____

2 Solve using the correct order of operations.

(8 + 8) x (15 − 3) = _____   7 x (13 − 5) + 12 = _____

34 − 6 + (6 x 7) − 15 = _____   46 + 6 − 5 x 2 = _____

3 Add or subtract.

$$
\begin{array}{r}
82,332 \\
+\ 80,016 \\
\hline
\end{array}
\qquad
\begin{array}{r}
94,561 \\
+\ 90,224 \\
\hline
\end{array}
\qquad
\begin{array}{r}
88,959 \\
+\ \ 2,211 \\
\hline
\end{array}
\qquad
\begin{array}{r}
98,641 \\
+\ 70,342 \\
\hline
\end{array}
$$

$$
\begin{array}{r}
99,080 \\
-\ 24,799 \\
\hline
\end{array}
\qquad
\begin{array}{r}
54,872 \\
-\ \ 9,187 \\
\hline
\end{array}
\qquad
\begin{array}{r}
72,443 \\
-\ \ 9,199 \\
\hline
\end{array}
\qquad
\begin{array}{r}
391,889 \\
-\ 62,422 \\
\hline
\end{array}
$$

5. 10100$_{two}$ 100010$_{two}$ 10$_{two}$
   1110$_{two}$ 111110$_{two}$ 111001$_{two}$

6. 11.079;   61.31;   812.24;   101.497
   120.359;   341.219;   765.478;   826.28
   PATIENCE

7. Range: 7   Range: 69
   Mean: 4.5   Mean: 44
   Mode: 2   Mode: 34
   Median: 3.5   Median: 34

   Range: 51
   Mean: 135
   Mode: 135
   Median: 135

8. $\frac{5}{7}$; $\frac{1}{6}$; $\frac{3}{4}$; $\frac{1}{5}$; $\frac{3}{5}$; $\frac{1}{3}$

9. $\frac{1}{9}$ $\underline{<}$ $\frac{2}{6}$; $\frac{8}{43}$ $\underline{<}$ $\frac{9}{43}$
   $\frac{3}{21}$ $\underline{=}$ $\frac{1}{7}$; $\frac{3}{4}$ $\underline{>}$ $\frac{7}{12}$

10. $\frac{8}{12} = \frac{2}{3}$; $\frac{38}{70} = \frac{19}{35}$; $\frac{3}{6} = \frac{1}{2}$
    $\frac{9}{12} = \frac{3}{4}$; $\frac{23}{42}$; $\frac{17}{30}$
    $\frac{5}{9}$; $\frac{5}{15} = \frac{1}{3}$

11. $3\frac{4}{5}$;   6; $9\frac{1}{3}$; $6\frac{1}{3}$
    $\frac{12}{5}$; $\frac{25}{7}$; $\frac{19}{4}$; $\frac{8}{6}$

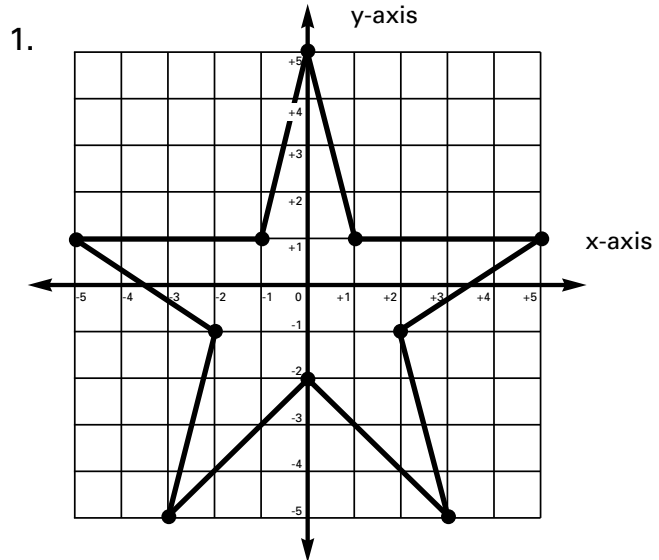12. $2\frac{9}{12} = 2\frac{3}{4}$; $2\frac{8}{12} = 2\frac{2}{3}$
    $\frac{8}{18} = \frac{4}{9}$; $9\frac{7}{10}$

13. 67.16;   8.82;   15.57;   6.96;   5.8117

14. 8.51;   5.9;   8.8

15. 0.2;   0.8;   0.9;   0.8

Quarter Test 3

1.

2. $\frac{7}{44}$; $\frac{2}{27}$; $\frac{3}{40}$; $\frac{40}{72} = \frac{5}{9}$
   $\frac{21}{48} = \frac{7}{16}$; $\frac{12}{45} = \frac{4}{15}$; $\frac{35}{54}$; $\frac{1}{48}$

3. 9;   4;   6;   5

4. $7\frac{1}{32}$; $21\frac{7}{14} = 21\frac{1}{2}$; $11\frac{1}{20}$
   $10\frac{4}{12} = 10\frac{1}{3}$; $24\frac{8}{24} = 24\frac{1}{3}$; $6\frac{27}{42} = 6\frac{9}{14}$

5. $\frac{8}{18} = \frac{4}{9}$; $\frac{3}{22}$; $\frac{17}{42}$; $\frac{25}{35} = \frac{5}{7}$

6. $1\frac{7}{28} = 1\frac{1}{4}$; $1\frac{11}{69}$; $\frac{76}{99}$; $1\frac{19}{203}$

7. 1; $2\frac{1}{2}$; $1\frac{1}{2}$
   $9\frac{1}{2}$; $2\frac{1}{4}$;   2

8. 9;   7,000
   900;   3
   20;   5,000