This test covers material taught in Dimensions Math 5A.

1 Use the number 357,014,296 to answer the following questions.

(a) Write the number in words.

(b) The value of the digit in the one millions place is _____.

(c) The digit _____ is in the hundred millions place.

(d) The digit 5 is in the _____ place.

2 Find the values.

(a) 35,510 × 100 = ☐

(b) 1,000 × 500,000 = ☐

(c) 2,600 × 20 = ☐

(d) 2,000 × 350 = ☐

3 Find the values.

(a) 317,000 ÷ 1,000 = ☐

(b) 80,000 ÷ 10 = ☐

(c) 21,000,000 ÷ 700 = ☐

(d) 320,000,000 ÷ 4,000 = ☐

4 Fill in the blanks.

(a) 20,000,000 + 2,000,000 + 800,000 + 9,000 + 500 = ☐

(b) 500,000,000 + 70,000,000 + 40,000 + 50 + 1 = ☐

(c) 605,700,016 = 600,000,000 + ☐ + 16

(d) 310,019,005 = 9,000 + 10,000,000 + ☐ + 5 + 10,000

5 Write >, <, or = in each ◯.

(a) 30,000 + 100,000,000 + 20,000,000 ◯ 80,000 + 900,000 + 9,000,000

(b) 514,189,043 ◯ 514,819,430

(c) One hundred and five millions ◯ 10 hundred thousands

(d) 39,642,000 + 10,000,000 ◯ 49,800,000 – 100,000

6 Find the values.

(a) $100 - 5 \times 9 \div 3 =$ ☐

(b) $40 + 40 \div 8 - 10 =$ ☐

(c) $35 \div 5 + 2 \times 7 =$ ☐

(d) $24 \div 4 \times 3 =$ ☐

7 Find the values.

(a) $80 \div (5 + 5) - 8 =$ ☐

(b) $3 \times (18 \div 3) + (4 \div 2) =$ ☐

(c) $(60 \div 10) + (7 - 3) \div 2 =$ ☐

(d) $3 \times (8 - 35 \div 7) \div 3 + 2 \times 2 =$ ☐

(e) $8 \times (13 + 9) = 8 \times$ ☐ $+$ ☐ $\times 9$

8 The admission price to a concert is $12 for an adult and $5 for a child. Aida bought 3 adult tickets and 3 child tickets. Write an expression with parenthesis to find the total amount she spent on tickets, and then find the value.

9 Find the values.

(a) $65 \times 39 =$ ☐

(b) $98 \times 788 =$ ☐

(c) $5{,}071 \times 36 =$ ☐

(d) $13 \times 115 \times 4 =$ ☐

10 Divide.

(a) 94 ÷ 17

(b) 105 ÷ 38

(c) 675 ÷ 20

(d) 7,240 ÷ 51

11 Brandon has $200 less than Jordan. Grace has $500 more than Jordan. Together they have $2,700. How much does Brandon have?

12 Add. Express each answer in simplest form.

(a) $\frac{2}{5} + \frac{3}{10} =$ _____

(b) $\frac{5}{7} + \frac{5}{2} =$ _____

(c) $\frac{8}{3} + \frac{7}{5} =$ _____

(d) $\frac{1}{2} + \frac{2}{5} + \frac{3}{4} =$ _____

13 Subtract. Express each answer in simplest form.

(a) $\frac{5}{6} - \frac{1}{3} =$ _____

(b) $\frac{1}{2} - \frac{1}{5} =$ _____

(c) $\frac{7}{5} - \frac{9}{7} =$ _____

(d) $\frac{8}{9} - \frac{1}{6} - \frac{1}{3} =$ _____

14 Add. Express each answer in simplest form.

(a) $5\frac{1}{4} + \frac{5}{8} =$ _____

(b) $\frac{3}{7} + 2\frac{1}{3} =$ _____

(c) $2\frac{1}{5} + 8\frac{2}{15} =$ _____

(d) $1\frac{1}{6} + 3\frac{1}{10} =$ _____

15 Subtract. Express each answer in simplest form.

(a) $6\frac{7}{8} - 2\frac{3}{4} =$ _____

(b) $10 - 1\frac{6}{13} =$ _____

(c) $4\frac{2}{5} - 3\frac{1}{7} =$ _____

(d) $5\frac{1}{9} - 4\frac{5}{6} =$ _____

16 Find the values. Express each answer in simplest form.

(a) $\frac{1}{4} \times 84 =$ _____

(b) $\frac{1}{8} \times \frac{1}{3} =$ _____

(c) $\frac{8}{9} \times \frac{9}{10} =$ _____

(d) $\frac{7}{4} \times \frac{3}{4} =$ _____

(e) $\frac{5}{12} \times \frac{12}{10} =$ _____

(f) $\frac{6}{11} \times \frac{11}{6} =$ _____

17 Find the values. Express each answer in simplest form.

(a) $6 \times 1\frac{3}{8} =$ _____

(b) $3\frac{2}{3} \times \frac{4}{7} =$ _____

(c) $1\frac{1}{4} \times 2\frac{3}{5} =$ _____

(d) $1\frac{1}{9} \times \frac{9}{10} =$ _____

18 Find the reciprocal of each number.

(a) $\frac{1}{9}$

(b) 30

(c) $\frac{14}{13}$

(d) $6\frac{2}{5}$

19 Find the values. Express each answer in simplest form.

(a) $\frac{1}{12} \div 4 =$ _____

(b) $\frac{5}{3} \div 3 =$ _____

(c) $\frac{3}{7} \div 2 =$ _____

(d) $9 \div \frac{4}{3} =$ _____

20 Find the values. Express each answer in simplest form.

(a) $20 - (\frac{3}{10} - \frac{3}{20}) - 5\frac{1}{10} =$ _____

(b) $5 - 16 \times \frac{1}{4} \div 2 =$ _____

(c) $\frac{1}{3} \times (10 - 9\frac{1}{3}) \div \frac{1}{9} =$ _____

(d) $(\frac{1}{2} \times 7) \div (\frac{2}{5} + \frac{1}{10}) =$ _____

21 A baker made 120 cookies. She sold $\frac{2}{5}$ of them in the morning and $\frac{3}{4}$ of the remainder in the afternoon. How many cookies did she have left?

22 A ribbon $\frac{3}{5}$ m long was cut into several pieces of equal length. Each piece of ribbon is $\frac{1}{10}$ m. How many pieces of ribbon are there?

23 $\frac{3}{4}$ of the rice in a sack weighs 6 lb. How much does $\frac{2}{3}$ of the rice in the sack weigh? Express the answer in simplest form.

24 Fill in the blanks.

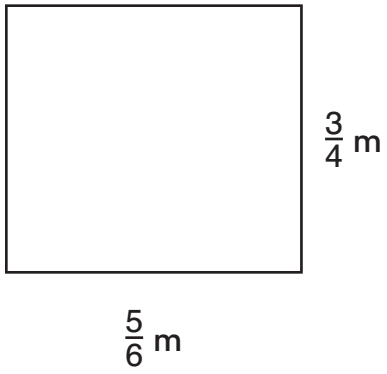
(a) $7\frac{9}{10}$ cm = ☐ cm ☐ mm

(b) $8\frac{1}{2}$ min = ☐ min ☐ s

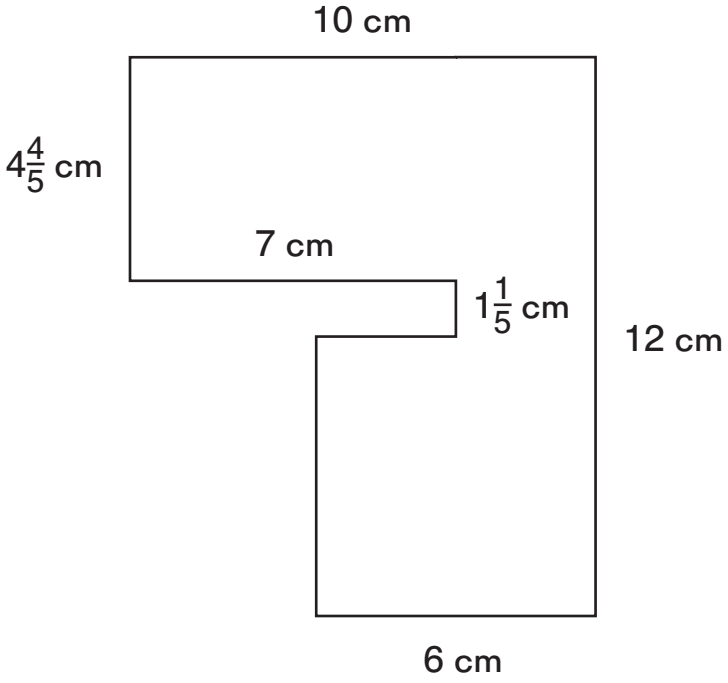
(c) $5\frac{1}{2}$ kg = ☐ g

(d) $2\frac{2}{3}$ ft = ☐ in

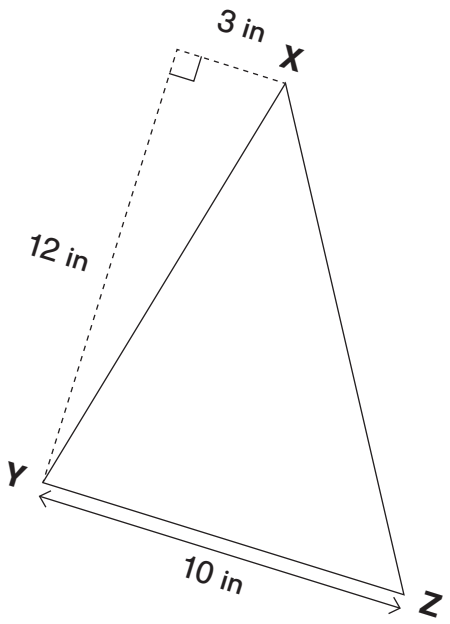
25 Find the area of the figure. Express the answer in simplest form.



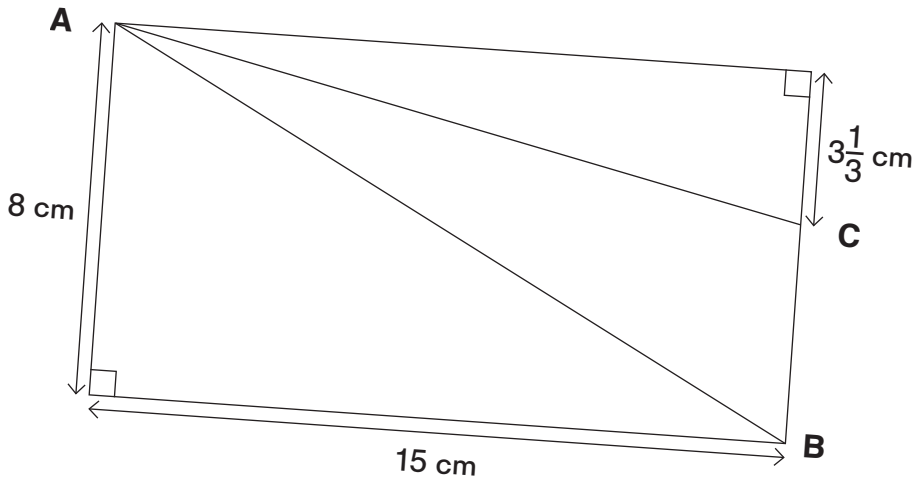
26 Find the area of the figure. Express the answer in simplest form.



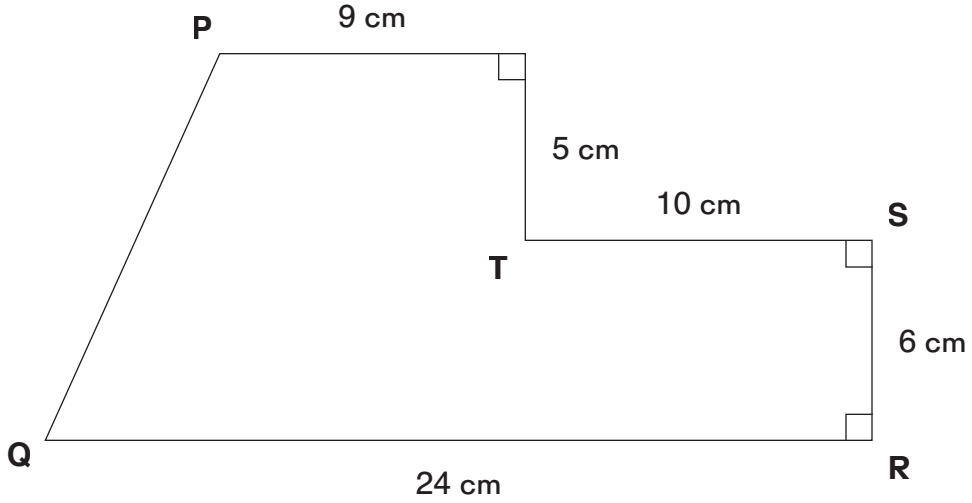
27 Find the area of Triangle XYZ.



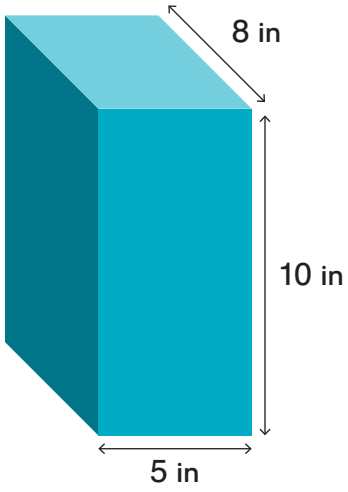
28 Find the area of Triangle ABC.



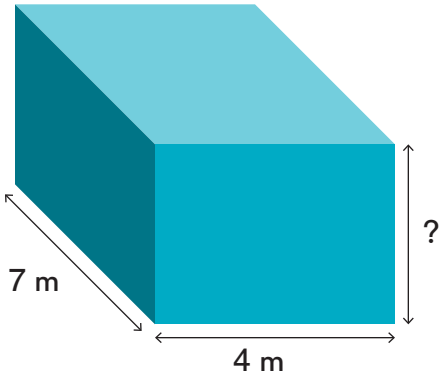
29 Find the area of Figure PQRST.



30 Find the volume of the cuboid.



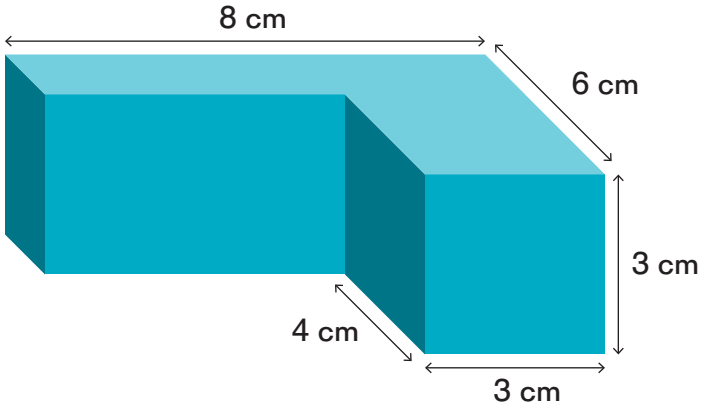
31 Find the length of the missing edge.



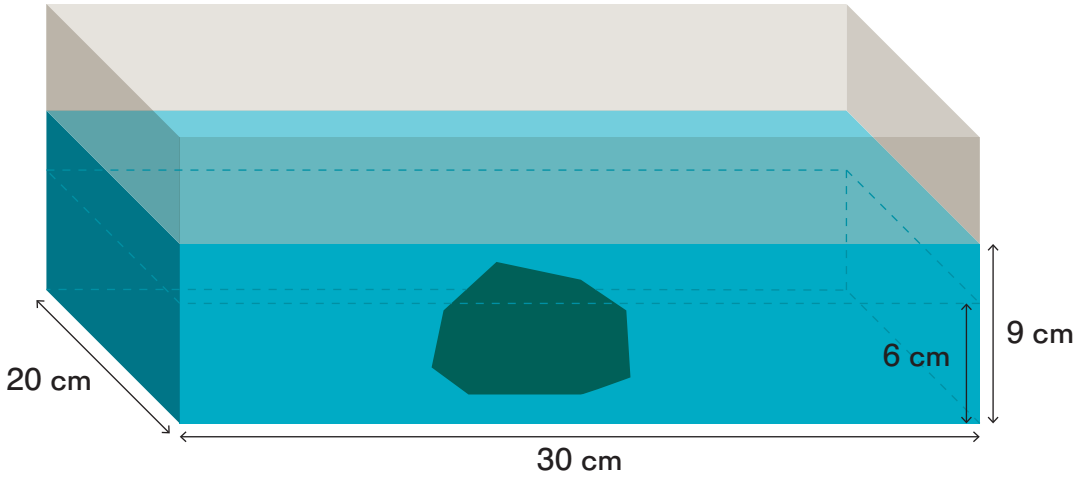
Volume = 84 m^3

Height = _____ m

32 Find the volume of the solid.



33 A rectangular tank with a length of 30 cm and a width of 20 cm was filled with water to a height of 6 cm. After a rock was placed in the tank, the height of the water rose to 9 cm. What is the volume of the rock?



1 (a) Three hundred fifty-seven million, fourteen thousand, two hundred ninety-six
(b) 7,000,000
(c) 3
(d) ten millions

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2 (a) 3,551,000
(b) 500,000,000
(c) 52,000
(d) 700,000

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3 (a) 317 (b) 8,000
(c) 30,000 (d) 80,000

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4 (a) 22,809,500
(b) 570,040,051
(c) 5,700,000
(d) 300,000,000

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5 (a) > (b) <
(c) > (d) <

---

6 (a) 85 (b) 35
(c) 21 (d) 18

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7 (a) 0 (b) 20
(c) 8 (d) 7
(e) 13; 8

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8 $3 \times (12 + 5) = 3 \times 17 = 51$
or
$(3 \times 12) + (3 \times 5) = 36 + 15 = 51$
$51

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9 (a) 2,535 (b) 77,224
(c) 182,556 (d) 5,980

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10 (a) 5 R 9 (b) 2 R 29
(c) 33 R 15 (d) 141 R 49

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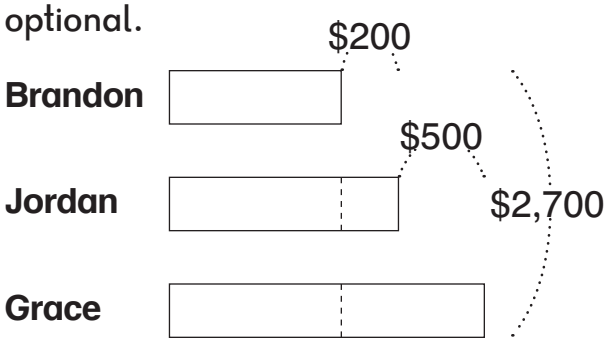
11 Solution may vary, bar model is optional.



3 units $\longrightarrow$ 2,700 – 200 – 200 – 500 = 1,800
1 unit $\longrightarrow \frac{1,800}{3} = 600$
$600

12 (a) $\frac{4}{10} + \frac{3}{10} = \frac{7}{10}$

$\frac{7}{10}$

(b) $\frac{10}{14} + \frac{35}{14} = \frac{45}{14} = 3\frac{3}{14}$

$3\frac{3}{14}$

(c) $\frac{40}{15} + \frac{21}{15} = \frac{61}{15} = 4\frac{1}{15}$

$4\frac{1}{15}$

(d) $\frac{10}{20} + \frac{8}{20} + \frac{15}{20} = \frac{33}{20} = 1\frac{13}{20}$

$1\frac{13}{20}$

13 (a) $\frac{5}{6} - \frac{2}{6} = \frac{3}{6} = \frac{1}{2}$

$\frac{1}{2}$

(b) $\frac{5}{10} - \frac{2}{10} = \frac{3}{10}$

$\frac{3}{10}$

(c) $\frac{49}{35} - \frac{45}{35} = \frac{4}{35}$

$\frac{4}{35}$

(d) $\frac{16}{18} - \frac{3}{18} - \frac{6}{18} = \frac{7}{18}$

$\frac{7}{18}$

14 (a) $5\frac{2}{8} + \frac{5}{8} = 5\frac{7}{8}$

$5\frac{7}{8}$

(b) $\frac{9}{21} + 2\frac{7}{21} = 2\frac{16}{21}$

$2\frac{16}{21}$

(c) $2\frac{3}{15} + 8\frac{2}{15} = 10\frac{5}{15} = 10\frac{1}{3}$

$10\frac{1}{3}$

(d) $1\frac{5}{30} + 3\frac{3}{30} = 4\frac{8}{30} = 4\frac{4}{15}$

$4\frac{4}{15}$

15 (a) $6\frac{7}{8} - 2\frac{6}{8} = 4\frac{1}{8}$

$4\frac{1}{8}$

(b) $9 - \frac{6}{13} = 8\frac{7}{13}$

$8\frac{7}{13}$

(c) $4\frac{14}{35} - 3\frac{5}{35} = 1\frac{9}{35}$

$1\frac{9}{35}$

(d) $5\frac{2}{18} - 4\frac{15}{18} = 4\frac{20}{18} - 4\frac{15}{18} = \frac{5}{18}$

$\frac{5}{18}$

16 (a) 21 (b) $\frac{1}{24}$

(c) $\frac{8}{10} = \frac{2}{5}$ (d) $\frac{21}{16} = 1\frac{5}{16}$

$\frac{2}{5}$ $1\frac{5}{16}$

(e) $\frac{1}{2}$ (f) 1

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17 (a) $6 \times \frac{11}{8} = 3 \times \frac{11}{4} = \frac{33}{4} = 8\frac{1}{4}$

$8\frac{1}{4}$

(b) $3\frac{2}{3} \times \frac{4}{7} = \frac{11}{3} \times \frac{4}{7} = \frac{44}{21} = 2\frac{2}{21}$

$2\frac{2}{21}$

(c) $1\frac{1}{4} \times 2\frac{3}{5} = \frac{5}{4} \times \frac{13}{5} = \frac{13}{4} = 3\frac{1}{4}$

$3\frac{1}{4}$

(d) $1\frac{1}{9} \times \frac{9}{10} = \frac{10}{9} \times \frac{9}{10} = 1$

1

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18 (a) 9

(b) $\frac{1}{30}$

(c) $\frac{13}{14}$

(d) $6\frac{2}{5} = \frac{32}{5}$

$\frac{5}{32}$

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19 (a) $\frac{1}{12} \div 4 = \frac{1}{12} \times \frac{1}{4} = \frac{1}{48}$

(b) $\frac{5}{3} \div 3 = \frac{5}{3} \times \frac{1}{3} = \frac{5}{9}$

(c) $\frac{3}{7} \div 2 = \frac{3}{7} \times \frac{1}{2} = \frac{3}{14}$

(d) $9 \div \frac{4}{3} = 9 \times \frac{3}{4} = \frac{27}{4} = 6\frac{3}{4}$

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20 (a) $20 - (\frac{3}{10} - \frac{3}{20}) - 5\frac{1}{10}$

$= 20 - (\frac{6}{20} - \frac{3}{20}) - 5\frac{2}{20}$

$= 20 - \frac{3}{20} - 5\frac{2}{20}$

$= 19\frac{17}{20} - 5\frac{2}{20}$

$= 14\frac{15}{20} = 14\frac{3}{4}$

(b) $5 - 16 \times \frac{1}{4} \div 2 = 5 - 4 \div 2 = 3$

(c) $\frac{1}{3} \times \frac{2}{3} \div \frac{1}{9} = \frac{1}{3} \times \frac{2}{3} \times 9 = 2$

(d) $(\frac{1}{2} \times 7) \div (\frac{2}{5} + \frac{1}{10}) = \frac{7}{2} \div \frac{5}{10} =$

$\frac{7}{2} \div \frac{1}{2} = \frac{7}{2} \times 2 = 7$

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21 Cookies left to sell in the afternoon $\longrightarrow \frac{3}{5}$ of 120

Cookies left $\longrightarrow \frac{1}{4}$ of cookies left to sell in the afternoon

$\frac{1}{4} \times \frac{3}{5} \times 120 = 18$

18

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22 $\frac{3}{5} \div \frac{1}{10} = 6$

6

23 $6 \div \frac{3}{4} = 6 \times \frac{4}{3} = 8$

$\frac{2}{3} \times 8 = \frac{16}{3} = 5\frac{1}{3}$

$5\frac{1}{3}$ lb

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24 (a) 7; 9

(b) 8; 30

(c) 5,500

(d) 32

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25 $\frac{5}{6} \times \frac{3}{4} = \frac{5}{8}$

$\frac{5}{8}$ m²

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26 $10 \times 4\frac{4}{5} = 48$

$3 \times 1\frac{1}{5} = 3 \times \frac{6}{5} = \frac{18}{5} = 3\frac{3}{5}$

$12 - 4\frac{4}{5} - 1\frac{1}{5} = 6$

$6 \times 6 = 36$

$48 + 3\frac{3}{5} + 36 = 87\frac{3}{5}$

$87\frac{3}{5}$ cm²

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27 $\frac{1}{2} \times 10 \times 12 = 60$

60 in²

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28 $8 - 3\frac{1}{3} = 4\frac{2}{3}$

$\frac{1}{2} \times 4\frac{2}{3} \times 15 = \frac{1}{2} \times \frac{14}{3} \times 15$

$= 7 \times 5 = 35$

35 cm²

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29 $10 \times 6 = 60$

$9 \times 11 = 99$

$\frac{1}{2} \times 5 \times 11 = \frac{55}{2} = 27\frac{1}{2}$

$60 + 99 + 27\frac{1}{2} = 186\frac{1}{2}$

$186\frac{1}{2}$ cm²

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30 $8 \times 10 \times 5 = 400$

400 in²

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31 $\frac{84}{7 \times 4} = 3$

3 m

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32 $8 \times 2 \times 3 = 48$

$4 \times 3 \times 3 = 36$

$48 + 36 = 84$

84 cm³

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33 $30 \times 20 \times 3 = 1{,}800$

1,800 cm³