

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)  $35,510 \times 100 =$

(b)  $1,000 \times 500,000 =$

(c)  $2,600 \times 20 =$

(d)  $2,000 \times 350 =$

**3** Find the values.

(a)  $317,000 \div 1,000 =$

(b)  $80,000 \div 10 =$

(c)  $21,000,000 \div 700 =$

(d)  $320,000,000 \div 4,000 =$

**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)  $94 \div 17$

(b)  $105 \div 38$

(c)  $675 \div 20$

(d)  $7,240 \div 51$

**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)  $5\frac{1}{4} + \frac{5}{8} = \underline{\hspace{2cm}}$

(b)  $\frac{3}{7} + 2\frac{1}{3} = \underline{\hspace{2cm}}$

(c)  $2\frac{1}{5} + 8\frac{2}{15} = \underline{\hspace{2cm}}$

(d)  $1\frac{1}{6} + 3\frac{1}{10} = \underline{\hspace{2cm}}$

**15** Subtract. Express each answer in simplest form.

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

(b)  $10 - 1\frac{6}{13} = \underline{\hspace{2cm}}$

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

(d)  $5\frac{1}{9} - 4\frac{5}{6} = \underline{\hspace{2cm}}$



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

(a)  $\frac{1}{4} \times 84 = \underline{\hspace{2cm}}$

(b)  $\frac{1}{8} \times \frac{1}{3} = \underline{\hspace{2cm}}$

(c)  $\frac{8}{9} \times \frac{9}{10} = \underline{\hspace{2cm}}$

(d)  $\frac{7}{4} \times \frac{3}{4} = \underline{\hspace{2cm}}$

(e)  $\frac{5}{12} \times \frac{12}{10} = \underline{\hspace{2cm}}$

(f)  $\frac{6}{11} \times \frac{11}{6} = \underline{\hspace{2cm}}$

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

(a)  $6 \times 1\frac{3}{8} = \underline{\hspace{2cm}}$

(b)  $3\frac{2}{3} \times \frac{4}{7} = \underline{\hspace{2cm}}$

(c)  $1\frac{1}{4} \times 2\frac{3}{5} = \underline{\hspace{2cm}}$

(d)  $1\frac{1}{9} \times \frac{9}{10} = \underline{\hspace{2cm}}$

**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)  $\frac{1}{12} \div 4 = \underline{\hspace{2cm}}$

(b)  $\frac{5}{3} \div 3 = \underline{\hspace{2cm}}$

(c)  $\frac{3}{7} \div 2 = \underline{\hspace{2cm}}$

(d)  $9 \div \frac{4}{3} = \underline{\hspace{2cm}}$

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

(a)  $20 - (\frac{3}{10} - \frac{3}{20}) - 5\frac{1}{10} = \underline{\hspace{2cm}}$

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

(c)  $\frac{1}{3} \times (10 - 9\frac{1}{3}) \div \frac{1}{9} = \underline{\hspace{2cm}}$

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

- 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.

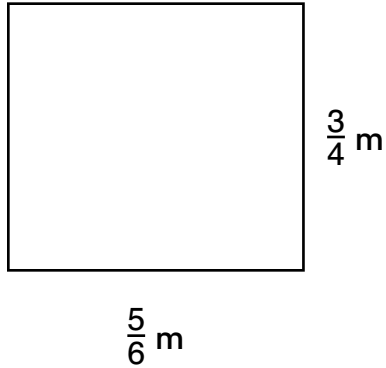
(a)  $7\frac{9}{10}$  cm =  cm  mm

(b)  $8\frac{1}{2}$  min =  min  s

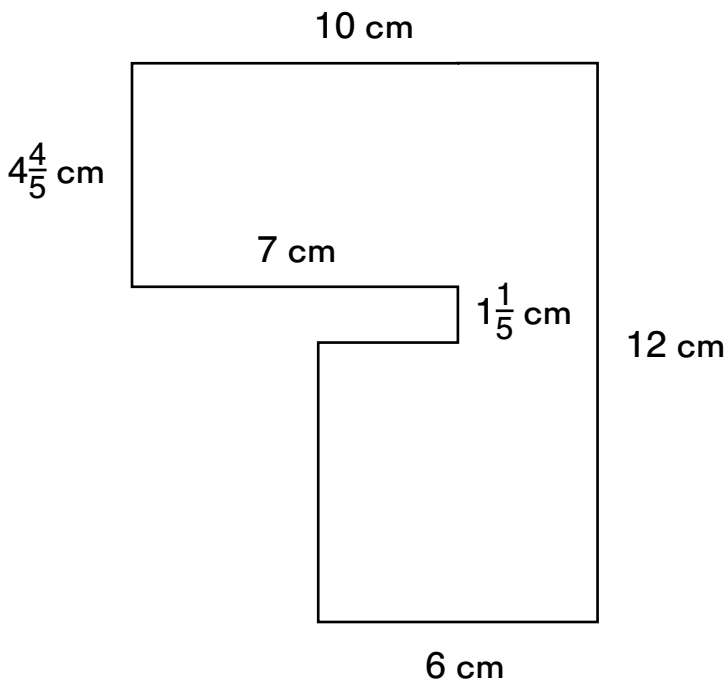
(c)  $5\frac{1}{2}$  kg =  g

(d)  $2\frac{2}{3}$  ft =  in

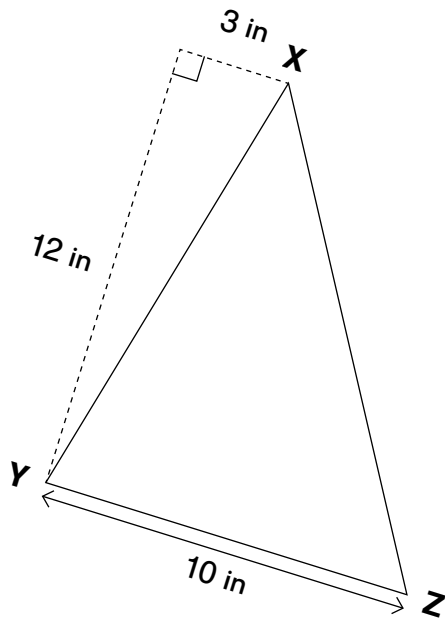
- 25 Find the area of the figure. Express the answer in simplest form.



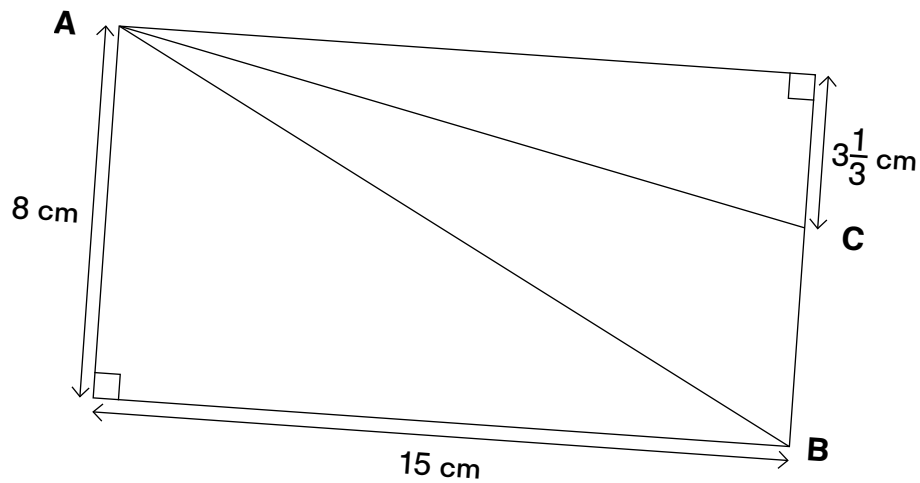
- 26 Find the area of the figure. Express the answer in simplest form.



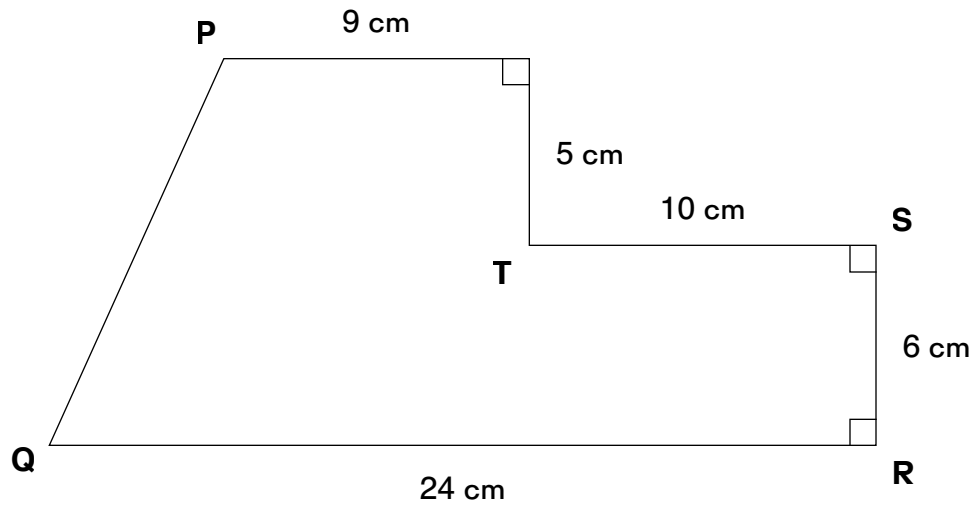
- 27 Find the area of Triangle XYZ.



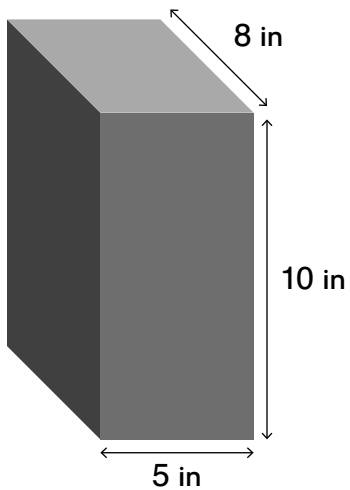
- 28 Find the area of Triangle ABC.



- 29** Find the area of Figure PQRST.

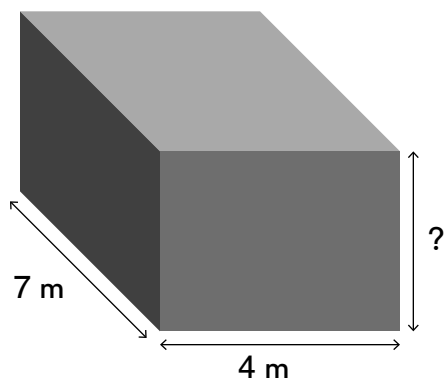


- 30** Find the volume of the cuboid.





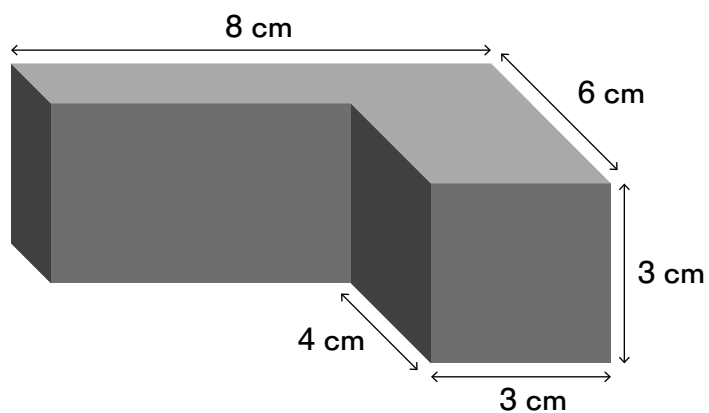
- 31** Find the length of the missing edge.



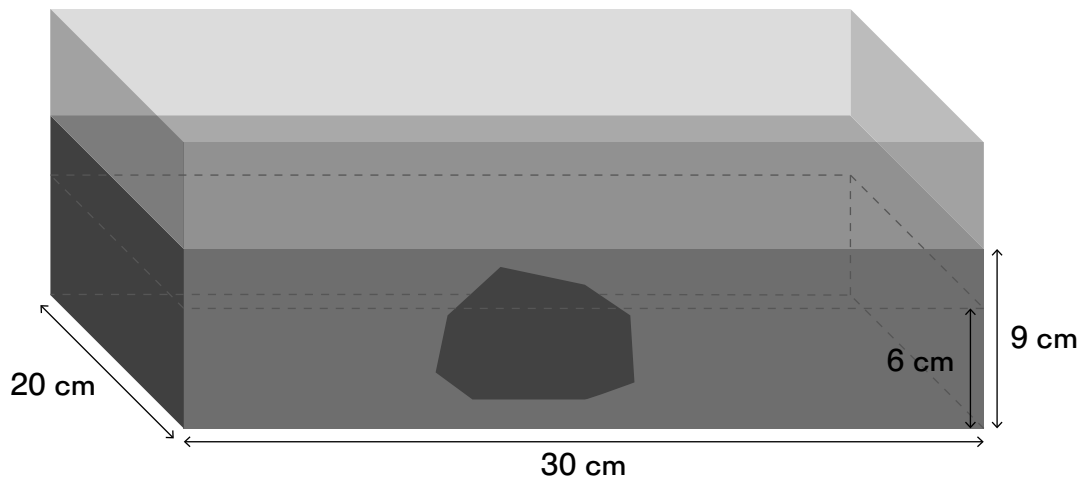
Volume =  $84 \text{ m}^3$

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?



## Answer Key

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

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

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

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

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

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

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

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

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

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

- 11** Solution may vary, bar model is optional.
- 
- Brandon
- Jordan
- Grace

$$\begin{aligned}
 3 \text{ units} &\longrightarrow 2,700 - 200 - 200 \\
 &- 500 = 1,800 \\
 1 \text{ unit} &\longrightarrow \frac{1,800}{3} = 600 \\
 &\$600
 \end{aligned}$$

## Answer Key

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

## Answer Key

**16** (a) 21 (b)  $\frac{1}{24}$   
 (c)  $\frac{8}{10} = \frac{4}{5}$  (d)  $\frac{21}{16} = 1\frac{5}{16}$   
 $\frac{4}{5}$   $1\frac{5}{16}$   
 (e)  $\frac{1}{2}$  (f) 1

**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

**18** (a) 9  
 (b)  $\frac{1}{30}$   
 (c)  $\frac{13}{14}$   
 (d)  $6\frac{2}{5} = \frac{32}{5}$   
 $\frac{5}{32}$

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

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

**21** Cookies left to sell in the afternoon  
 $\rightarrow \frac{3}{5}$  of 120  
 Cookies left  $\rightarrow \frac{1}{4}$  of cookies left to  
 sell in the afternoon  
 $\frac{1}{4} \times \frac{3}{5} \times 120 = 18$   
 18

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

## Answer Key

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**23**  $6 \div \frac{3}{4} = 6 \times \frac{4}{3} = 8$   
 $\frac{2}{3} \times 8 = \frac{16}{3} = 5\frac{1}{3}$   
 $5\frac{1}{3} \text{ lb}$

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- 24** (a) 7; 9  
(b) 8; 30  
(c) 5,500  
(d) 32
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**25**  $\frac{5}{6} \times \frac{3}{4} = \frac{5}{8}$   
 $\frac{5}{8} \text{ m}^2$

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**26**  $10 \times 4\frac{4}{5} = 48$   
 $3 \times 1\frac{1}{5} = 3 \times \frac{6}{5} = \frac{18}{5} = 3\frac{3}{5}$   
 $12 - 4\frac{4}{5} - 1\frac{1}{5} = 6$   
 $6 \times 6 = 36$   
 $48 + 3\frac{3}{5} + 36 = 87\frac{3}{5}$   
 $87\frac{3}{5} \text{ cm}^2$

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**27**  $\frac{1}{2} \times 10 \times 12 = 60$   
 $60 \text{ in}^2$

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**28**  $8 - 3\frac{1}{3} = 4\frac{2}{3}$   
 $\frac{1}{2} \times 4\frac{2}{3} \times 15 = \frac{1}{2} \times \frac{14}{3} \times 15$   
 $= 7 \times 5 = 35$   
 $35 \text{ cm}^2$

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**29**  $10 \times 6 = 60$   
 $9 \times 11 = 99$   
 $\frac{1}{2} \times 5 \times 11 = \frac{55}{2} = 27\frac{1}{2}$   
 $60 + 99 + 27\frac{1}{2} = 186\frac{1}{2}$   
 $186\frac{1}{2} \text{ cm}^2$

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**30**  $8 \times 10 \times 5 = 400$   
 $400 \text{ in}^2$

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

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**32**  $8 \times 2 \times 3 = 48$   
 $4 \times 3 \times 3 = 36$   
 $48 + 36 = 84$   
 $84 \text{ cm}^3$

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**33**  $30 \times 20 \times 3 = 1,800$   
 $1,800 \text{ cm}^3$

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