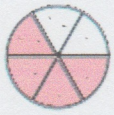
Key

Math Fundamental: Unit 2 Pre-Test

1.) (1 pt each, 2 pts total) Write the shaded amount as a fraction.

a)  $\boxed{\frac{1}{2}}$

b)  $\frac{4}{6} = \boxed{\frac{2}{3}}$

2.) (2 pts each, 4 pts total) Solve each fraction as though it were a division problem. Write your answer as a mixed number.

a) $\frac{78}{8}$

$$8\overline{)78} \quad 9 \text{ r } 6 \qquad 9\frac{6}{8} = \boxed{9\frac{3}{4}}$$

b) $\frac{57}{9}$

$$9\overline{)57} \quad 6 \text{ r } 3 \qquad 6\frac{3}{9} = \boxed{6\frac{1}{3}}$$

3.) (2 pts each, 4 pts total) Solve each problem. Make sure to write your answer as a fraction.

a) A doctor gave his patient liquid medicine and told him to drink 28 cups over the next 6 days. How much should the patient drink each day?

$\frac{28}{6}$ $\quad 6\overline{)28} \quad 4 \text{ r } 4 \qquad 4\frac{4}{6} = \boxed{4\frac{2}{3}}$

b) Sam had collected 60 leaves to feed to his caterpillar collection. If he wanted to split the leaves equally amongst the 7 cages, how much should he put in each cage?

$\frac{60}{7}$ $\quad 7\overline{)60} \quad 8 \text{ r } 4 \qquad \boxed{8\frac{4}{7}}$

4.) (2 pts each, 4 pts total) Solve each problem. Write the answer as a mixed number fraction (if possible).

a) $\frac{9}{12} - \frac{1}{12}$

$\frac{8}{12} = \boxed{\frac{2}{3}}$

b) $\frac{3}{4} + \frac{2}{4}$

$\frac{5}{4} = \boxed{1\frac{1}{4}}$

5.) (3 pts each, 6 pts total) Solve each problem. Write the answer as a mixed number fraction (if possible).

a) $\frac{8}{10} - \frac{2}{4}$

10: 10, 20, 30

4: 4, 8, 12, 16, 20, 24

$\frac{8}{10} = \frac{16}{20}$ (×2)

$\frac{2}{4} = \frac{10}{20}$ (×2, ×5)

$\frac{16}{20} - \frac{10}{20} = \frac{6}{20} = \boxed{\frac{3}{10}}$

b) $\frac{3}{6} + \frac{3}{8}$

6: 6, 12, 18, 24

8: 8, 16, 24, 32, 40

$\frac{3}{6} = \frac{12}{24}$ (×4)

$\frac{3}{8} = \frac{9}{24}$ (×3)

$\frac{12}{24} + \frac{9}{24} = \frac{21}{24} = \boxed{\frac{7}{8}}$

6.) (3 pts each, 6 pts total) Solve each problem.

a) $5 \times \frac{1}{8}$

$\frac{5}{1} \times \frac{1}{8} = \boxed{\frac{5}{8}}$

b) $\frac{1}{12} \times 4$

$\frac{1}{12} * \frac{4}{1} = \frac{4}{12} = \boxed{\frac{1}{3}}$

7.) (3 pts each, 6 pts total) Solve each problem. Answer as a mixed fraction.

a) $5 \times \frac{4}{6}$

$\frac{5}{1} \times \frac{4}{6} = \frac{20}{6} \div 2 = \boxed{\frac{10}{3}} = 3\overline{)10}\ R1 = \boxed{3\frac{1}{3}}$

b) $\frac{6}{10} \times 3$

$\frac{6}{10} \times \frac{3}{1} = \frac{18}{10} \div 2 = \frac{9}{5} = 5\overline{)9}\ R4 = \boxed{1\frac{4}{5}}$

8.) (3 pts each, 6 pts total) Solve each problem.

a) $\frac{2}{3} \times \frac{1}{2}$

$\frac{2}{3} \times \frac{1}{2} = \boxed{\frac{1}{3}}$

b) $\frac{9}{12} \times \frac{6}{8}$

$\frac{9}{12} \times \frac{6}{8} = \boxed{\frac{9}{16}}$

9.) (3 pts each, 12 pts total) Solve each problem. Answer as an improper fraction (if necessary)

a) $\frac{6}{7} \times \frac{7}{10}$

$\frac{\cancel{6}^{3}}{\cancel{7}_{1}} \times \frac{\cancel{7}^{1}}{\cancel{10}_{5}} = \boxed{\frac{3}{5}}$

b) $\frac{9}{24} \times \frac{6}{90}$

$\frac{\cancel{9}^{1}}{\cancel{24}_{4}} \times \frac{\cancel{6}^{1}}{\cancel{90}_{10}} = \boxed{\frac{1}{40}}$

c) $3\frac{4}{6}$

$\frac{(3 * 6) + 4}{6} = \frac{22}{6}$

$\frac{\cancel{3}^{1}}{\cancel{2}_{1}} \times \frac{\cancel{22}^{11}}{\cancel{6}_{2}} = \boxed{\frac{11}{2}}$

d) $\frac{7}{9} \times \frac{15}{4}$

$\frac{7}{\cancel{9}_{3}} \times \frac{\cancel{15}^{5}}{4} = \boxed{\frac{35}{12}}$

10.) (3 pts each, 6 pts total) Solve each problem. Write your answer as a mixed number (if possible).

a) $\frac{1}{2} \div 9$

$\frac{1}{2} \div 9$

$\frac{1}{2} * \frac{1}{9} = \boxed{\frac{1}{18}}$

b) $7 \div \frac{1}{5}$

$7 \div \frac{1}{5}$

$\frac{7}{1} * \frac{5}{1} = \boxed{35}$

11.) (3 pts each, 6 pts total) Write your answer as a mixed number (if possible).

a) $\frac{22}{8} \div \frac{11}{2}$

$\frac{22}{8} \div \frac{11}{2}$

$\frac{22}{8} * \frac{2}{11} = \boxed{\frac{1}{2}}$

b) $8\frac{1}{2} \div \frac{34}{6}$

$\frac{(8 \times 2) + 1}{2} = \frac{17}{2}$

$\frac{17}{2} \div \frac{34}{6}$

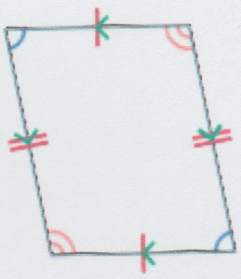
$\frac{17}{2} * \frac{6}{34} = \boxed{\frac{3}{2}}$

12.) (3 pts each, 6 pts total) Name each of the following shapes. Place a check beside each category of shape for which it qualifies.

a) Name of Shape: parallelogram

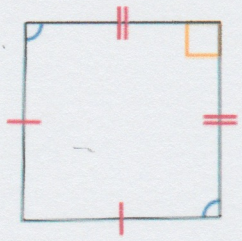
This shape also fall under the category of:

- ☐ kite
- ☑ parallelogram
- ☑ quadrilateral
- ☐ rectangle
- ☐ rhombus
- ☐ square
- ☐ trapezoid



b) Name of Shape: Kite

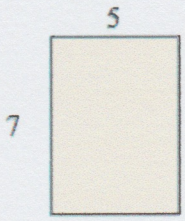
This shape also fall under the category of:



- [x] kite
- [ ] parallelogram
- [x] quadrilateral
- [ ] rectangle
- [ ] rhombus
- [ ] square
- [ ] trapezoid

13.) (2 pts each, 4 pts total) Find the area (in cm) of the rectangles shown.

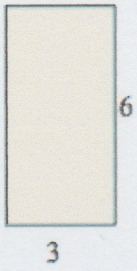
a)



$A = L \times W$

$5\text{cm} \times 7\text{cm} = 35\text{cm}^2$

b)

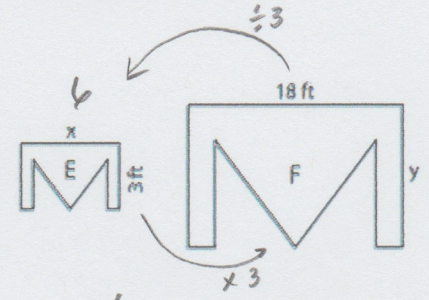


$A = L \times W$

$3\text{cm} \times 6\text{cm} = 18\text{cm}^2$

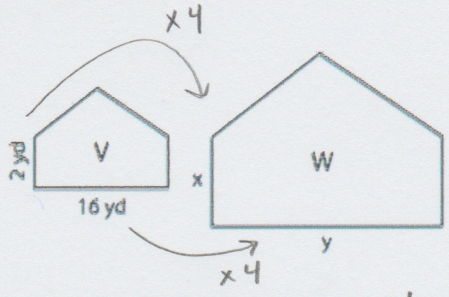
14.) (3 pts each, 6 pts total) Find x and y.

a) Scale factor of E to F is 1 : 3



x = 6 ; y = 9

b) Scale factor of W to V is 4 : 1



x = 8 ; y = 64

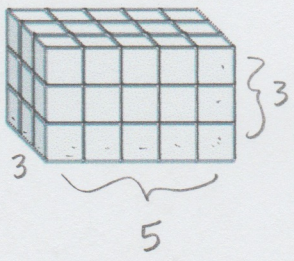
15.) (2 pts each, 4 pts total) Find the length, width and height of the rectangular prism. Then find the volume.

a) L = 5

W = 3

H = 3

V = 45 units^3



5 x 3 x 3 =

15 x 3 = 45

b) L = 5

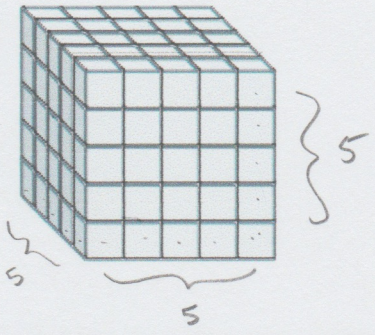
W = 5

H = 5

V = 125 units^3

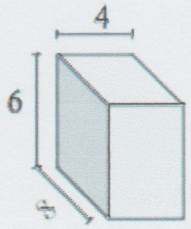
$5 \times 5 \times 5$

25×5



16.) (3 pts each, 6 pts total) Find the volume of each of the rectangular prisms. Measured in cm (not to scale).

a)



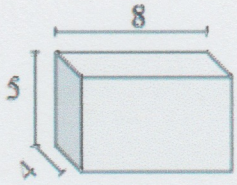
L x W x H

4 x 8 x 6

$32 \times 6 = 192$

192 cm^3

b)



L x W x H

8 x 4 x 5

$32 \times 5 = 160$

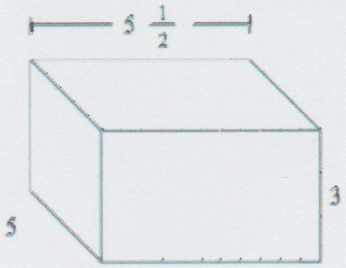
160 cm^3

17.) (3 pts each, 6 pts total) Find the volume of each of the rectangular prisms. Measured in cm (not to scale).

$5\frac{1}{2} = \frac{(5*2)+1}{2}$

$\frac{11}{2}$

a)

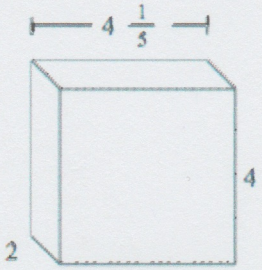


L x W x H

$\frac{11}{2} \times \frac{5}{1} \times \frac{3}{1} = \frac{165}{2}$

$\frac{165}{2}$ cm^3

b)



$4\frac{1}{5} = \frac{(4\times5)+1}{4}$

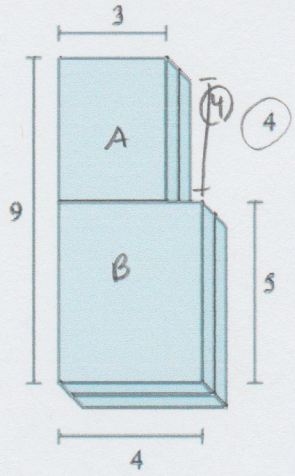
$\frac{21}{4}$

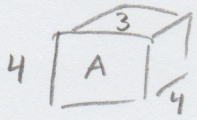
$L \times W \times H$

$\frac{21}{4} \times \frac{2}{1} \times \frac{4}{1} = 42\,cm^3$

18.) (3 pts each, 6 pts total) Find the total volume of each figure shown. Measured in cm (not to scale). Please note: the floating number represents the width of the figure

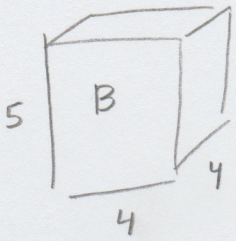
a)





$4 \times 4 \times 3$

$16 \times 3 = 48\,cm^3$



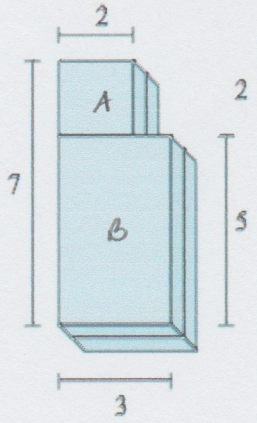
$5 \times 4 \times 4$

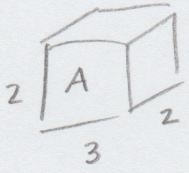
$20 \times 4 = 80\,cm^3$

$80\,cm^3 + 48\,cm^3$

$128\,cm^3$

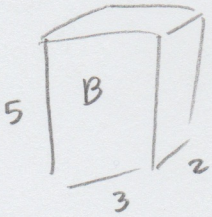
b)





$2 \times 3 \times 2$

$6 \times 2 = 12\,cm^3$



$5 \times 3 \times 2$

15×2

$30\,cm^3$

$30\,cm^3 + 12\,cm^3 = 42\,cm^3$