

1. Solve.

a. $5.6 + x = 4.2$

b. $y + 13.4 = 4.2$

c. $9.6 \div z = -3.2$

2. Solve (round to the nearest tenth if you have a decimal):

a. 24 is what percent of 60?

b. 20% of what number is 24?

c. 19% of 60 is what number?

d. What percent of 55 is 34?

e. What is 60% of 42?

3. The price of gasoline rose from \$1.54 to \$3.85.

a. What is the percent increase?

b. If the price reverses from \$3.85 to \$1.54, what is the percent decrease?

4. Solve.

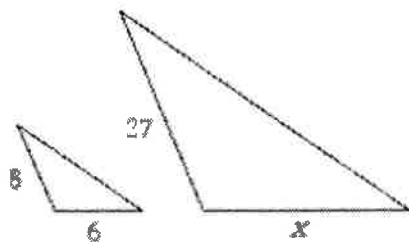
a. $\frac{8}{10} = \frac{x}{25}$

b. $\frac{12}{9} = \frac{20}{y}$

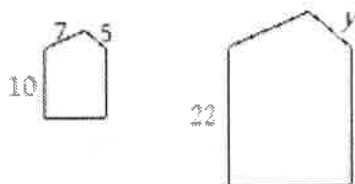
5. The cost of 14 gallons of gas is \$19.46. How much gas could you buy with \$8.70? Set up equivalent ratios to solve.

6. Solve for the missing side lengths in the similar shapes below.

a.



b.



7. On a road map, 1 inch represents 30 miles. How many miles would 3.5 inches represent?

8. Jackie's car gets 18 miles per gallon of gasoline. How many gallons of gas would be required for Jackie's car to travel 108 miles? How do you know? Explain.

9. Ceylon can swim 4 laps in 5 minutes. At that rate, how many minutes will it take her to swim 22 laps?

1. Solve.

a. $-5.6 + x = 4.2$

$-5.6 \quad -5.6$

$x = -1.4$

b. $y + 13.4 = 4.2$

$-13.4 \quad -13.4$

$y = -9.2$

c. $9.6 \div z = -3.2$

$9.6 \div -3.2 = z$

$z = -3$

2. Solve (round to the nearest tenth if you have a decimal):

a. 24 is what percent of 60?

$\frac{24}{60} = 0.4 \times 100 = 40\%$

b. 20% of what number is 24?

$5 \times \left(\frac{20}{100} = \frac{24}{x} \right) \times 5$

$x = 120$

c. 19% of 60 is what number?

$60 \times 0.19 = 11.4$

d. What percent of 55 is 34?

$\frac{34}{55} = 34 \div 55 = 0.618 \times 100 = 61.8\%$

e. What is 60% of 42?

$42 \times 0.6 = 25.2$

3. The price of gasoline rose from \$1.54 to \$3.85.

a. What is the percent increase?

$\frac{3.85 - 1.54}{1.54} = \frac{2.31}{1.54} = 1.5 \times 100 = 150\%$

* $\frac{\text{difference}}{\text{original}}$

b. If the price reverses from \$3.85 to \$1.54, what is the percent decrease?

$\frac{3.85 - 1.54}{3.85} = \frac{2.31}{3.85} = 0.6 \times 100 = 60\%$ decrease

4. Solve.

a.

$\frac{8}{10} = \frac{x}{25}$

$x = 20$

$8 \cdot 25 = 10x$

$\frac{200}{10} = \frac{10x}{10}$

b.

$\frac{12}{9} = \frac{20}{y}$

$y = 15$

$20 \cdot 9 = 12 \cdot y$

$\frac{180}{12} = \frac{12y}{12}$

5. The cost of 14 gallons of gas is \$19.46. How much gas could you buy with \$8.70? Set up equivalent ratios to solve.

$$\frac{14 \text{ gal}}{\$19.46} = \frac{x}{\$8.70}$$

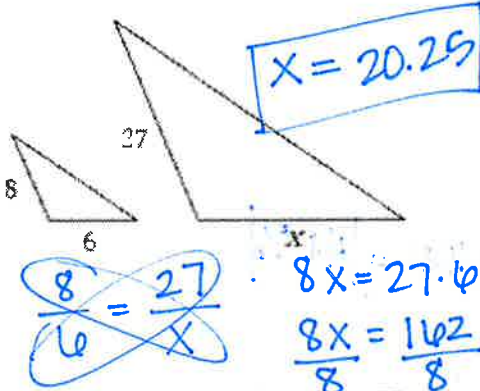
$$14 \cdot 8.70 = 19.46x$$

$$\frac{121.8}{19.46} = \frac{19.46x}{19.46}$$

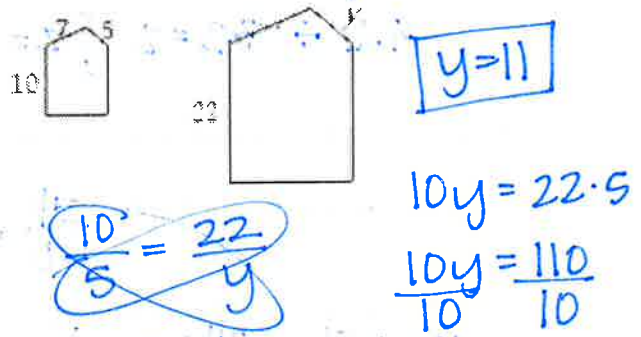
$$x = 6.26 \text{ gallons}$$

6. Solve for the missing side lengths in the similar shapes below.

**corresponding sides!*



b.



7. On a road map, 1 inch represents 30 miles. How many miles would 3.5 inches represent?

$$30x \left(\frac{1 \text{ in}}{30 \text{ mi}} = \frac{3.5 \text{ in}}{x \text{ mi}} \right) \times 30$$

$$x = 105 \text{ miles}$$

8. Jackie's car gets 18 miles per gallon of gasoline. How many gallons of gas would be required for Jackie's car to travel 108 miles? How do you know? Explain.

$$\div 18 \left(\frac{18 \text{ miles}}{1 \text{ gal}} = \frac{108 \text{ miles}}{x \text{ gal}} \right) \div 18$$

$$108 \div 18 = 6$$

$$6 \text{ gallons}$$

If 1 gallon is 18 miles, then I can divide 108 miles by 18 to see what # of gallons fits into 108 miles.

9. Ceylon can swim 4 laps in 5 minutes. At that rate, how many minutes will it take her to swim 22 laps?

$$\frac{4 \text{ laps}}{5 \text{ min}} = \frac{22 \text{ laps}}{x \text{ min}}$$

$$4x = 5 \cdot 22$$

$$\frac{4x}{4} = \frac{110}{4}$$

$$x = 27.5 \text{ minutes}$$