

NON-GRADED RATIO/PROP/PERCENT -- ANSWERS

(1) Write the ratio comparing 3 boys to 6 girls in three ways.

$$3:6$$

$$3 \text{ to } 6$$

$$\frac{3}{6} = \frac{1}{2}$$

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(2) Change the ratio 6:7 so that it is equivalent to 54:____.

$$\frac{6}{7} \times \frac{9}{9} = \frac{54}{63}$$

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(3) Solve the following proportions:

(a) $\frac{x}{10} = \frac{1}{2} \rightarrow 10 \times 1 \div 2 = 5$

(b) $\frac{16}{9} = \frac{192}{x} \rightarrow 9 \times 192 \div 16 = 108$

(c) $\frac{3 \text{ liters}}{x} = \frac{10 \text{ liters}}{160 \text{ square meters}}$

$$\rightarrow 160 \times 3 \div 10 = 48 \text{ m}^2$$

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(4) 15 percent of 70 is what number?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

$$\frac{\text{is}}{70} = \frac{15}{100}$$

$$\rightarrow 70 \times 15 \div 100 = 10.5$$

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(5) What percent of 60 is 42?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

$$\frac{42}{60} = \frac{\%}{100}$$

$$\rightarrow 42 \times 100 \div 60 = 70$$

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(6) 70 percent of what number is 85?

$$\frac{\text{is}}{\text{of}} = \frac{\%}{100}$$

$$\frac{85}{\text{of}} = \frac{70}{100}$$

$$\rightarrow 85 \times 100 \div 70 = 121.4528571$$

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(7) Solve:

(a) A price increases from \$50 to \$65. What is the percent of increase?

(b) A price decreases from \$35 to \$28. What is the percent of decrease?

Subtract the two values, divide by the original amount, and then multiply by 100:

(a) $(65 - 50) \div 50 \times 100 = 30\%$ increase

(b) $(35 - 28) \div 35 \times 100 = 20\%$ decrease



(8) Complete the chart:

Decimal	Percentage	Fraction
0.46	46%	$\frac{46}{100} = \frac{23}{50}$
0.122	12.2%	$\frac{122}{1000} = \frac{61}{500}$
$5 \div 8 = 0.625$	62.5%	$\frac{5}{8}$



(9) Jorge is standing next to a tree. Jorge is 6-feet tall but his shadow is only 5 feet long. The tree's shadow is 14 feet long. How tall is the tree?

	Jorge	tree
real object	6 ft	x
shadow	5 ft	14 ft

$$6 \times 14 \div 5 = 16.8 \text{ ft}$$



(10) If Jolene can type 18 pages in 3 hours, how long will it take her to type 45 pages?

$$\frac{18 \text{ pages}}{3 \text{ hours}} = \frac{45 \text{ pages}}{x}$$

$$3 \times 45 \div 18 = 7.5 \text{ hours}$$



(11) There are 3 rest stops for every 25 miles of highway. How many rest stops would there be on 220 miles of highway?

$$\frac{3 \text{ rest stops}}{25 \text{ miles}} = \frac{x}{220 \text{ miles}}$$

$$3 \times 220 \div 25 = 26.4 \rightarrow \mathbf{26 \text{ rest stops}}$$

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(12) Jolene is a real estate broker. She earns a 6% commission when she sells a home. What is her commission on a home that she sold for \$295,500?

$$295500 \times 0.06 = \mathbf{\$17,730}$$

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