

Proportional Reasoning  
Quiz 3 (Q2) - Quiz A

Directions:

- 1) YOU MAY USE A CALCULATOR.
- 2) THIS MUST BE DONE IN PENCIL.
- 3) EACH PROBLEM IS LABELED WORTH 2 POINTS, UNLESS NOTED OTHERWISE.

Estimate Percents of Number.

Percent of a number is a  
NUMBER. IT IS NOT a percent!

- 1.) 57% of 58

$$60\% \text{ of } 60 \approx 36$$

- 2.) 149% of 205

$$150\% \text{ of } 200 \approx 1.5 \times 200 = 300$$

- 3.) Estimate 45% of 268

$$50\% \text{ of } 250 = 0.5 \times 250 = 125$$

Estimate each Percent.

- 4.) 14 out of 25

$$\frac{14}{25} = \frac{3}{5} = 60\%$$

- 5.) 89 out of 121

$$\frac{90}{120} = \frac{9}{12} = \frac{3}{4} = 75\%$$

Find the Percent of Change. Round to the nearest tenth. State whether the percent of change is decrease or increase.

$$1.188 \approx 1.2$$

$$\boxed{120\%}$$

- 6.) From \$457 to \$1000

$$\frac{543}{457} = 1.188 \approx 1.19$$

$$\frac{1000 - 457}{457} = \frac{543}{457}$$

$$\boxed{119\%}$$

$$\text{New} = 1000$$

$$\text{Old} = 457$$

- 7.) From 24 kittens to 7 kittens

$$\frac{7 - 24}{24}$$

$$\text{New} = 7$$

$$\text{Old} = 24$$

$$\frac{\text{New} - \text{Old}}{\text{Old}} = \frac{7 - 24}{24}$$

71% decrease

- 8.) COOKIES On <sup>OLD</sup>Tuesday, a baker sold 132 cookies. On <sup>New</sup>Wednesday, she sold 108 cookies. Find the percent of change to the nearest tenth of a percent. (4pts)

$$\begin{array}{l} \text{OLD} = 132 \\ \text{New} = 108 \end{array} \quad \frac{\text{New} - \text{OLD}}{\text{OLD}} = \frac{108 - 132}{108} = \frac{-24}{108} \approx -0.2$$

20% decrease

Find the selling price of each item.

- 9.) Television: \$669; 23% markup

$$23\% = 0.23 \quad 669 \times 0.23 = 153.87$$

$$\begin{array}{r} 669 \\ 153.87 \\ \hline 822.87 \end{array} \quad \boxed{\$822.87}$$

- 10.) CD: \$8.99;  $34 \frac{4}{5}\%$  mark up

$$34.8\% = 0.348 \quad 8.99 \times 0.348 = 3.12852$$

$$\boxed{\$12.12}$$

- 11.) Video Game \$275, 25% off

$$25\% = 0.25 \quad 0.25 \times 275 = 68.75$$

$$\boxed{\$206.25}$$

- 12.) What is the markup rate on \$230 game system that <sup>regularly</sup> sells for \$75?

$$\begin{array}{l} \text{New} = 230 \\ \text{OLD} = 75 \end{array} \quad \frac{\text{New} - \text{OLD}}{\text{OLD}} = \frac{155}{75} = 2.06666... = 2.06$$

$$\approx \boxed{207\%}$$

markup rate is always in %.

- 13.) What is the discount rate on a \$294 skis that regularly sells for \$420?

$$\begin{array}{l} \text{New} = 294 \\ \text{OLD} = 420 \end{array} \quad \frac{294 - 420}{420} = -\frac{126}{420} = -0.3$$

$$\boxed{30\%} \text{ Discount}$$

Discount rate is always in %.

Find the simple interest rate to the nearest cent.

- 14.) \$250 at 6.5% for 3 years

$$6.5\% = 0.065$$

$$I = PRT = 250 \times 0.065 \times 3$$

$$\boxed{I = \$48.75}$$

- 15.) \$5200 at 13.5% for <sup>1.5 years</sup> 18 months

$$13.5\% = 0.135$$

$$I = 5200 \times 0.135 \times 1.5$$

$$\boxed{I = \$1053}$$

- 16.) INSTRUMENTS Lane borrowed \$1200 for a new drum set. She will be paying 6.5% in simple interest over the next 2 years. What is the total amount of interest she will be paying on the loan? (4 pts)

$$P = 1200$$

$$R = 6.5\% \approx 0.065$$

$$T = 2 \text{ years}$$

$$I = PRT$$

$$1200 \times 0.065 \times 2 = 156$$

$$\boxed{I = \$156}$$

- 17.) CARS Toya has a car loan of \$8500. Over the course of the loan, she paid a total of \$5525 in interest at a rate of 13%. How many months was the car loan? (4 pts)

$$P = 8500$$

$$I = 5525$$

$$R = 13\% = 0.13$$

$$I = PRT$$

$$5525 = 8500 \times 0.13 \times T$$

$$T = 5 \text{ years} = 60 \text{ months}$$

extra credit