

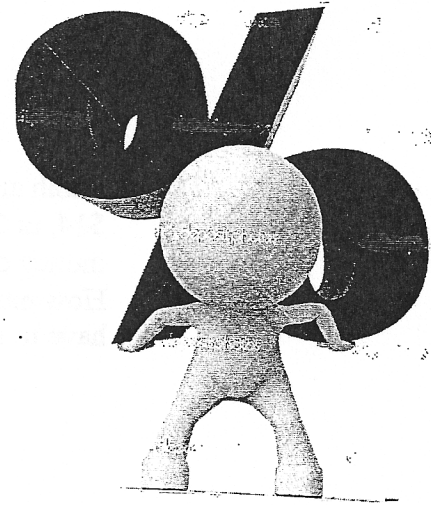
Name _____

Date _____

Period _____

Pre-Algebra
Percents Take Home and Check

Use the percent proportion to solve:



A 1) What percent of 60 is 15?

① $\frac{15}{60} = \frac{x}{100}$ $60x = 1500$
 $x = 25$

A 2) What number is 12% of 72?

② $\frac{x}{72} = \frac{12}{100}$ $100x = 864$
 $x = 8.64$

A 3) 9 is 45% of what number?

③ $\frac{9}{x} = \frac{45}{100}$ $45x = 900$
 $x = 20$

B 4) 6% of what number is $10\frac{1}{2}$?

④ $\frac{10.5}{x} = \frac{6}{100}$ $6x = 1050$
 $x = 175$

B 5) What number is .5% of 8?

⑤ $\frac{x}{8} = \frac{.5}{100}$ $100x = 4$
 $x = .04$

A 6) A paperback book originally priced at \$12.50 is on sale for \$7.50. What percent of the original cost is the sale price?

⑥ $\frac{7.50}{12.50} = \frac{x}{100}$ $12.50x = 750$
 $x = 60\%$

A

- 7) Sarah and Monique spent \$14, or 35% of their own money on movie tickets. How much money did they have to start with?

7

$$\frac{14}{x} = \frac{35}{100}$$

$$35x = 1400$$

$$x = 40$$

A

- 8) 95 of 273 students volunteered. What percent of students did not volunteer?

8

$$\frac{273}{-95} \\ 178$$

$$\frac{178}{273} = \frac{x}{100}$$

$$273x = 17800$$

$$x = 65\%$$

B

- 9) Granite, a stone found in New Hampshire and Vermont, is 0.8% water. How many pounds of water are there in 3,000 lbs. of granite?

9

$$\frac{x}{3000} = \frac{.8}{100}$$

$$100x = 2400$$

$$x = 24 \text{ lbs.}$$

B

- 10) About 9.4% of the people in Texas live in Houston. If the population of Texas is 20,852,000, what is the population of Houston?

10

$$\frac{x}{20852000} = \frac{9.4}{100}$$

$$100x = 196008800$$

$$x = 1,960,088 \text{ peo.}$$

- A 11) Ms. Allon received a \$325 commission, which is a fee paid based on a percent of her sales. If her sales totaled \$8,125, what is the percent that she earns?

$$\textcircled{11} \quad \frac{325}{8125} = \frac{x}{100}$$

$$8125x = 32500$$

$$x = 4\%$$

- A 12) Write $\frac{5}{8}$ as a percent. Round to the nearest hundredth if necessary.

$$\textcircled{12} \quad .625 = 62.5\%$$

- A 13) Write $\frac{7}{15}$ as a percent. Round to the nearest hundredth if necessary.

$$\textcircled{13} \quad .4666 = 46.67\%$$

- A 14) Write $\frac{33}{40}$ as a percent. Round to the nearest hundredth if necessary.

$$\textcircled{14} \quad .825 = 82.5\%$$

- A 15) Write 0.45% as a decimal and as a fraction in simplest form.

$$\textcircled{15} \quad .0045 = \frac{45}{10000} = \frac{9}{2000}$$

- A 16) Write 8.25 as a percent.

$$\textcircled{16} \quad 825\%$$

A 17) Write .7% as a fraction in lowest terms and a decimal.

$$.7\% = .007 = \frac{7}{1,000}$$

B 18) Write $4\frac{1}{8}\%$ as a decimal and fraction in lowest terms.

$$\frac{1}{8} = .125 \quad 4.125\% = \frac{4.125}{100} = \frac{4125}{100,000} = \frac{33}{8000}$$

B 19) Write $\frac{13}{15}$ as a percent. Round to two decimal places.

$$\frac{13}{15} = .8\bar{6} = .87 = \boxed{87\%}$$

A 20) Write 0.0765 as a percent.

$$0.0765 = \boxed{7.65\%}$$

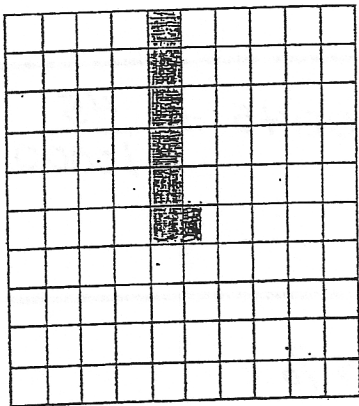
A 21) A total of 243 vehicles visited a car wash today. About 62% of these vehicles were cars. How many cars were washed today?

$$\frac{62}{100} = \frac{X}{243}$$

$$100X = 62 \cdot 243$$
$$100X = 15,066$$
$$X = 150.66$$

$$\boxed{\sim 151 \text{ cars}}$$

A 22) Write the amount shaded below as a percent.



$$6.5\%$$

($6\frac{1}{2}$ boxes out of a hundred)

- 23) You have a coupon for a 15% discount of any item in a store. You will pay 5% sales tax on the sale price. How much will you pay for a shirt whose regular price is \$16.50? Explain your answer.

$$\begin{array}{r} \$16.50 \\ \times .15 \\ \hline 2.475 \end{array}$$

$$\begin{array}{r} 16.50 \\ - 2.48 \\ \hline \$14.02 \text{ sale price} \\ \times 1.05 \text{ tax (+cost)} \\ \hline \underline{\underline{\$14.72}} \text{ sales price w/tax} \end{array}$$

- 24) One sixth of your flower garden contains petunias, 0.195 of your garden contains marigolds, and 18% contains pansies. Order these numbers from least to Greatest.

$\frac{1}{6}$ petunias	$\sqrt[6]{1} = .1\bar{6}$	Least to Greatest
$\frac{195}{1,000}$ marigolds	$= 0.195$	1) petunias
$\frac{18}{100}$ pansies	$= .18$	2) pansies
		3) marigolds

- 25) In 2004, there were about 35,900 Oragutans remaining in Borneo and Sumatra. In 2008, the population had fallen about 43%. About how many orangutans were left in Borneo and Sumatra in 2008?

$$\frac{43}{100} = \frac{x}{35,900} \quad 100x = 1,543,700$$

$$x = 15,437$$

$$35,900 - 15,437 = \boxed{20,463}$$

- 26) In 1970, the price of a loaf of bread was \$0.24. Today that price is \$3.49. What is the percent of increase in the price of bread?

$$\frac{\text{original amt.} - \text{new amt.}}{\text{original amt.}} =$$

$$\frac{|0.24 - 3.49|}{0.24} = \frac{3.25}{0.24} = 13.54$$

$$\boxed{1,354\% \uparrow}$$

- 27) Julia's income in 2013 was \$40,500. In 2014 her income dropped to \$38,250. What was the percent of decrease?

$$\frac{\$40,500 - \$38,250}{\$40,500} = \frac{2,250}{40,500} =$$

$$.05 = \boxed{5.55\% \downarrow}$$

- A 28) A street vendor buys purses from a manufacturer for \$18 each. The vendor marks up the price by 150%. What is the retail price?

$$\begin{array}{r} \$18 \times 1.5 = \$27.00 \text{ retail} \\ \text{mark-up} \\ + 18.00 \text{ cost} \\ \hline \$45.00 \text{ retail price} \end{array}$$

- A 29) You buy a pair of skis that are on sale for 15% off the original price of \$435. What is the sale price?

method #1

$$\begin{array}{r} \$435 \times .15 = 65.25 \\ \hline 435.00 \\ - 65.25 \\ \hline \$369.75 \\ \text{sale price} \end{array}$$

method #2

$$\$435 \times .85 = \$369.75 \text{ sale price.}$$

- C X 30) A sporting goods company marks up the wholesale price (original price) of a canoe by 75%. The retail price is \$999. What is the wholesale price?

$$\$999 = \text{cost} + \text{markup}$$

$$\$999 = x + .75x$$

$$\$999 = 1.75x$$

$$\frac{\$999}{1.75} = \frac{1.75x}{1.75}$$

$$x = \$570.86 \\ \text{wholesale price}$$

- A 31) You are running a carnival and you estimate that 500 students will buy candy apples. When the carnival ends you find that 385 candy apples were sold. What was the percent error?

$$\frac{|\text{estimated value} - \text{actual value}|}{\text{actual value}} \times 100\% =$$

$$\frac{500 - 385}{385} = \frac{115}{385} = .2987 \times 100\% =$$

$$29.87\% \text{ error}$$

- B 32) You estimated your vacation costs for your senior spring trip to the Bahamas at \$2450 for a week. You really had a great time but you spent \$3925. What is your percent error?

$$\frac{|\$2,450 - \$3,925|}{\$3,925} = \frac{\$1,475}{\$3,925} =$$

$$.37579 = 37.58\% \text{ error}$$

- * 33) C The selling price of the bicycle you carry in your bicycle shop is \$430. The markup rate is 30%. What was the markup amount and the wholesale price (original amount) of the bike?

$$\text{selling price} = \text{cost} + \text{markup}$$

$$\$430 = x + .30x$$

$$\frac{430}{1.3} = \frac{1.30x}{1.3}$$

$$\$330.77 = x = \text{original price}$$

$$430 - 330.77 = \$99.23 \text{ markup amt}$$

- * 34) C A tennis racket is sold for \$220. If the cost to the store was \$150, find the markup rate.

$$\text{markup} = 220 - 150 = 70$$

$$\text{selling price} = \text{cost} + \text{markup}$$

$$\$220 = \$150 + \$70$$

$$\text{markup} = \text{markup rate} \times \text{cost}$$

$$\$70 = x \cdot 150$$

$$70 = 150x$$

$$70/150 = 46.6\bar{6}\%$$

- * 35) C A boat that normally sells for \$20,000 is on sale for \$17,500. Find the discount rate.

$$\text{Sale price} = \text{original price} - \text{discount}$$

$$17,500 = \$20,000 - \$2,500$$

$$\text{Discount} = \frac{\text{Discount}}{\text{Rate}} \times \text{original}$$

$$2500 = x \cdot 20,000$$

$$2500/20,000 = .125 \quad 12.5\% \text{ discount}$$

- * 36) C A dress sells for \$165. The discount rate is 10%. Find the discount amount and then find the original price of the dress.

$$\text{Sale Price} = \text{original price} - \text{discount}$$

$$\$165 = x - .10$$

$$\$165 = .90x$$

$$\$183.3\bar{3} = x \text{ original price}$$

$$183.33 - 165 = \$18.33 \text{ discount}$$

- 37) A You order a meal at your favorite restaurant for \$23. You leave a 18% tip. The sales tax is 6%. What is the total cost of your meal?

$$\begin{array}{r} \$23.00 \\ \times .18 \text{ tip} \\ \hline 4.14 \text{ tip} \end{array}$$

$$\begin{array}{r} 23.00 \\ \times .06 \\ \hline \$1.38 \text{ tax} \end{array}$$

$$\begin{array}{r} 23.00 \\ + 4.14 \\ + 1.38 \\ \hline \end{array}$$

$$\$28.52 \text{ total w/ tip \& tax}$$

- 38) A laptop computer is on sale for 15% off the original price of \$1600. When it does not sell, the laptop goes on sale for an additional 20% off. What is the new sale price of the laptop?

$$\begin{array}{r} \$1600 \\ \times .15 \\ \hline \$240 \end{array} \quad \begin{array}{r} 1600 \\ - 240 \\ \hline \$1360 \end{array}$$

$$\begin{array}{r} \$1360 \\ \times .20 \\ \hline \$272 \end{array} \quad \begin{array}{r} 1360 \\ - 272 \\ \hline \end{array}$$

\$1088 new sale price

- 39) In Los Angeles, CA, it rains an average of 35 days per year. About what percent of days in a year does it NOT rain in Los Angeles? Round your answer to the nearest percent.

$$\frac{35}{365} = .0958$$

$$\begin{array}{r} 100 \\ - .0958 \\ \hline .904 \end{array}$$

90.4%

- 40) The Los Angeles Sparks won 87.5% of 32 regular season games before winning the WNBA championship in 2001. How many games did they win?

$$\frac{87.5}{100} = \frac{x}{32}$$

$$100x = 2800$$

$$x = 28 \text{ games}$$

- 41) Find the simple interest on a loan of \$2,300 at 6.5% for 5 years and 6 months..

$$I = P \cdot R \cdot T$$

$$I = 2300 \cdot .065 \cdot 5.5$$

$$I = 822.25$$

- 42) Find the length of time for a loan of \$4,500 at 7% with simple interest payment of \$1,102.50.

$$I = P \cdot R \cdot T$$

$$1,102.5 = 4500 \cdot .07 \cdot T$$

$$1,102.5 = 315T$$

$$3.5 \text{ years} = T$$

- 43) In how many years would the amount to be repaid on a loan at 10% interest be equal to the principal of the loan?

choose an amount for the loan.

$$I = P \cdot R \cdot T$$

$$1,000 = 1,000 \cdot .10 \cdot T$$

$$1,000 = 100T$$

$$10 \text{ years} = T$$