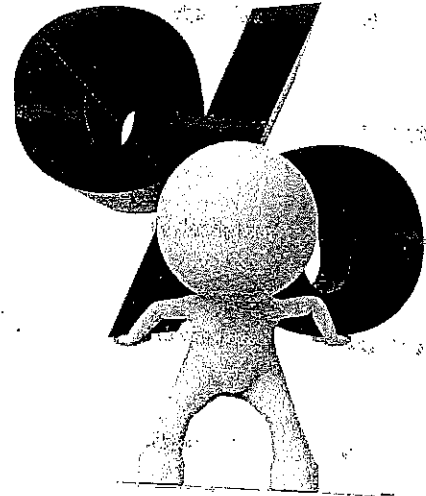


Name _____

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?

$$\begin{array}{r} 273 \\ - 95 \\ \hline 178 \end{array}$$

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

$$273x = 17800$$

$$x = 65\%$$

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?

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

$$8125x = 32500$$

$$x = 490$$

- 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.

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

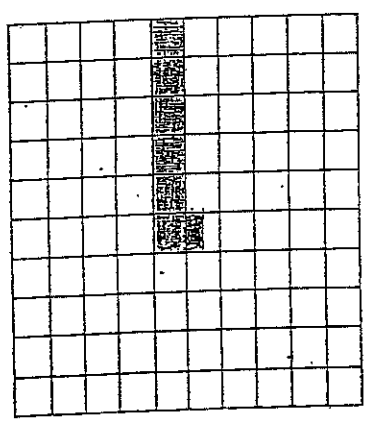
A 20) Write 0.0765 as a percent.

$$0.0765 = 7.65\%$$

A 21) A total of 243 vehicles visited a car wash today. About 52% of these vehicles were cars. How many cars were washed today?

$$\frac{62}{100} = \frac{X}{243} \quad \begin{aligned} 100X &= 62 \cdot 243 \\ 100X &= 15,066 \\ X &= 150.66 \\ &\approx 151 \text{ cars} \end{aligned}$$

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.

B

$$\begin{array}{r} \$16.50 \\ \times .15 \\ \hline 2,475 \end{array}$$

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

B

- 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.

$$\begin{array}{l} \frac{1}{6} \text{ petunias} \quad 6 \overline{)1} = .1\bar{6} \\ \frac{195}{1,000} \text{ marigolds} \quad = 0.195 \\ \frac{18}{100} \text{ pansies} \quad = .18 \end{array}$$

Least to Greatest

- 1) petunias
- 2) pansies
- 3) marigolds

B

- 25) In 2004, there were about 35,900 Orangutans 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?

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

$$x = 15,437$$

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

A

- 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?

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

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

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

B

- 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

$$\frac{x}{435} = \frac{15}{100} \quad x = 65.25$$

- 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?

$$\frac{999}{x} = \frac{175}{100}$$

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

- 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?

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

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

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

- 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?

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

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

* 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?

$$\frac{430}{x} = \frac{130}{100}$$

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

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

* 34)
C

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

$$\frac{70}{150} = \frac{x}{100}$$

$$x = 46.6\% \text{ markup}$$

* 35)
C

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

$$\frac{2500}{20,000} = \frac{x}{100}$$

$$x = 12.5\% \text{ Discount}$$

* 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.

$$\frac{165}{x} = \frac{90}{100}$$

$$x = \$183.33 \text{ original price}$$

$$183.33 - 165 = \$18.33$$

A

37) 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?

$$\frac{x}{23} = \frac{18}{100} \quad x = 4.14 \text{ tip}$$

$$\frac{x}{23} = \frac{6}{100} \quad x = 1.38 \text{ tax}$$

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

$$\$28.52 \text{ total}$$

- 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?

$$\frac{x}{1600} = \frac{15}{100} \quad x = 240$$

$$\begin{array}{r} 1600 \\ -240 \\ \hline \$1360 \end{array}$$

$$\frac{x}{1360} = \frac{20}{100} \quad x = 272$$

$$\begin{array}{r} 1360 \\ -272 \\ \hline \$1088 \text{ sale price} \end{array}$$

- 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.

$$\frac{35}{365} = \frac{x}{100} \quad \sim 9.6\% \text{ it rains}$$

$$\begin{array}{r} 100.0 \\ -9.6 \\ \hline \end{array}$$

$\sim 90.4\% \text{ it does not rain}$

- 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.

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

$$I = 2300 \cdot 0.065 \cdot 5.5$$

$$I = 822.25$$

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

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

$$1,102.5 = 4500 \cdot 0.07 \cdot T$$

$$1,102.5 = 315T$$

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

- 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.

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

$$1,000 = 1,000 \cdot 0.10 \cdot T$$

$$1,000 = 100T$$

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