Math Unit 4 Review

Name __KEY__ # ____

1. A bus is traveling at 60 miles per hour. Write an equation to find "d" distance after a given amount of time "t" in hours.

$$d = 60t$$
$$d = 60 \cdot t$$

2. Marie can read 200 pages of a book in 4 hours. What is the unit rate?

$$\frac{200 \text{ pages}}{4 \text{ hrs}} = \frac{x}{1 \text{ hr}}$$

$$4\overline{)200} \quad \frac{50}{200} \quad \frac{-200}{0}$$

50 pgs/1 hour

$\boxed{50 \text{ pages per hour}}$

3. At Costco, a variety box of snacks contains 8 granola bars for every 12 pretzels. What is the ratio for the number of granola bars to pretzels in the box?

$$\frac{8 \text{ granola bars} \div 4}{12 \text{ pretzels} \div 4} = \boxed{\frac{2 \text{ granola}}{3 \text{ pretzels}}}$$

4. There are 225 people in the movie theater audience. If 60% of the people bought popcorn, how many people would that be?

$$\frac{60}{100} = \frac{x}{225} \qquad \frac{3}{5} = \frac{x}{225} \qquad \frac{5x}{5} = \frac{675}{5} \qquad \boxed{x = 135 \text{ people}}$$

5. How many centimeters are in 6 inches? (Hint: 1 inch = 2.54 cm)

$$\frac{2.54 \text{ cm}}{1 \text{ in}} = \frac{x}{6 \text{ in}} \qquad \boxed{x = 15.24 \text{ cm}}$$

6. How many inches are in 3 yards?

$$\frac{36 \text{ in}}{1 \text{ yd}} = \frac{x}{3 \text{ yds}} \qquad \boxed{x = 108 \text{ in}}$$

7. Sheldon jogs at a rate of 15 minutes per mile. How many miles will he jog after 1 hour?

$$\frac{15 \text{ min}}{1 \text{ mile}} = \frac{60 \text{ min}}{x} \qquad \frac{15x}{15} = \frac{60}{15} = \boxed{4 \text{ miles}}$$

$$\begin{array}{c|c} 15 & 15 \text{ min} \\ \hline 15 & 15 \end{array}$$

8. Which of the following is an example of a rate? Mark all that apply.

   ✓ Mike reads 3 pages in 20 minutes   ___ Mike reads 3 pages

   ___ Mike works for 15 minutes   ___ Mike writes 1 story

9. There are 9 fiction books for every 3 nonfiction books. How many fiction books are displayed if there if 12 nonfiction books on display?

$$\overset{\times 4}{\frac{9 \text{ fiction}}{3 \text{ nonfiction}}} = \underset{\times 4}{\frac{x}{12 \text{ non}}} \qquad \frac{3x}{3} = \frac{108}{3}$$

$$\boxed{x = 36 \text{ fiction}}$$

10. In a restaurant, 24 people ordered fried chicken, 18 ordered pizza, and 6 ordered salad. What percent of the people ordered pizza or salad?

$$\begin{array}{r} 18 \\ +\ 6 \\ \hline 24 \end{array}$$ pizza + salad

$$\begin{array}{r} 24 \\ 18 \\ +\ 6 \\ \hline 48 \end{array}$$ total

$$\frac{24 \text{ pizza/salad}}{48 \text{ total}} = \frac{1}{2}$$

$$\frac{1}{2} = \frac{50}{100} = \boxed{50\%}$$

11. Jenn makes 5 model cars in 20 hours. After learning a better way to build models, she can now build 7 cars in 21 hours. How many more models can she build using the new method than using the old method after 420 hours?

Old: $\frac{5 \text{ cars}}{20 \text{ hrs}} = \frac{1}{4}$

$\frac{1}{4} = \frac{x}{420} = 105 \text{ cars}$

New: $\frac{7 \text{ cars}}{21 \text{ hours}} = \frac{1}{3}$

$\frac{1}{3} = \frac{x}{420}$ $\frac{3x}{3} = \frac{420}{3}$ $x = 140 \text{ cars}$ $\boxed{35 \text{ cars}}$

$$\begin{array}{r} 140 \\ -105 \\ \hline 35 \text{ cars} \end{array}$$

12. Out of 102 students, 25% liked chocolate, 35% liked gummy bears, and 40% liked bubble gum. About how many students did **NOT** like chocolate or bubble gum?

$\frac{35}{100} = \frac{x}{102}$ $\frac{7}{20} = \frac{x}{102}$ $\frac{20x}{20} = \frac{714}{20}$

$$x = 35.7 \approx \boxed{36 \text{ students}}$$

13. If a factory makes 1000 lightbulbs in 4 hours, what is the unit rate at which they are made?

$\frac{1000 \text{ bulbs}}{4 \text{ hrs}}$ $\boxed{250 \text{ bulbs}}$

14. Steve earns $200 per week. If he puts 70% away in the bank, how much money is this per week?

$$\frac{70}{100} = \frac{x}{200}$$

$$\frac{100x}{100} = \frac{14000}{100}$$

$$\boxed{x = \$140}$$