1) Your soccer team finishes the regular season with a record of 40 wins and 8 losses. What is the ratio of wins to losses?

\[
\frac{40}{8} = \frac{5}{1} \quad \text{5 wins to 1 loss}
\]

2) Express both quantities in a COMMON unit of measure, then write the ratio as a fraction in SIMPLEST form: 36 months to 2 years

\[
\frac{36 \text{ months}}{24 \text{ months}} = \frac{3}{2}
\]

3) A concert sold out in 3 hours. 2,400 tickets were sold. Find the hourly rate at which the tickets sold.

\[
\frac{2,400 \text{ tickets}}{3 \text{ hrs.}} = 800 \text{ tickets per hour}
\]

4) A car traveled 240 miles on 12 gallons of gas. Another car used 60 gallons of gas to travel 1000 miles. What proportion could you write to see if the cars are using fuel at the same rate?

\[
\frac{240 \text{ miles}}{12 \text{ gal}} = \frac{1000 \text{ mile}}{60 \text{ gal}}
\]

5) A pine tree is 320 feet tall and 4 feet wide. Find the ratio of its height to its width, expressed in simplest form.

\[
\frac{320 \text{ tall}}{4 \text{ wide}} = \frac{80}{1}
\]

6) If Mary types 400 words in 5 minutes, how long will it take to type 640 words?

\[
\frac{400 \text{ words}}{5 \text{ min}} = \frac{640 \text{ words}}{x} \quad x = 8 \text{ min}
\]

7) Chocolate cookies cost $3.60 for a 10 ounce box and $6.00 for a 15 ounce box. Which is a better buy?

\[
\frac{3.60}{10 \text{ oz}} = 0.36 \text{ oz}
\]

\[
\frac{6.00}{15 \text{ oz}} = 0.40 \text{ oz}
\]

8) Your family drives 600 miles in 8 hours on a vacation trip. What is the average rate of speed? Round your answer to the nearest whole number.

\[
r = \frac{600 \text{ miles}}{8 \text{ hrs}} = 75 \text{ miles/hr}
\]

9) You may buy 4 pounds of apples for $2.20. How much would it cost to buy 9 pounds?

\[
\frac{4 \text{ lbs}}{2.20} = \frac{9 \text{ lbs}}{x} \quad x = 4.95
\]

10) How many centimeters equal one meter?

\[
\frac{100 \text{ cm}}{1 \text{ m}} = \frac{x \text{ cm}}{85 \text{ m}} \quad x = 850 \text{ cm}
\]

11) Find the slope and the y-intercept of the equation: \( y = -3x - 6 \).

Slope \(-3\) \quad Y-Intercept \(-6\)

12) Solve \( 6n - 7 = -37 \)

\[
n = -5
\]

13) Write the equation of the line in slope-intercept form.

\[
y = -\frac{4}{5}x + 2
\]
14) Find the slope of the line through the points
(1, 6) and (-3, 2).
\[ \frac{y_2 - y_1}{x_2 - x_1} = \frac{2 - 6}{-3 - 1} = \frac{-4}{-4} = 1 \]

15) Graph the equation
\[ y = -\frac{4}{3}x + 4. \]

16. Create a graph that shows a speed of 30 miles per hour, and shows that a driver can go 300 miles in 10 hours.

17. How many millimeters equal one centimeter?

10. How many millimeters equal 290 centimeters?

\[ \frac{10\text{ mm}}{1\text{ cm}} = \frac{x\text{ mm}}{290\text{ cm}} \]
\[ x = 2900\text{ mm} \]

18. Use the graph above to determine the unit rate for insurance premiums (dollars per month).
\[ \frac{600}{4\text{ mo}} = \frac{150}{1\text{ mo}}. \]

19. What is the slope shown in the graph above?
\[ m = \frac{150}{1} \]

20. Guillermo prepaid $900 for his insurance. For how many months did Guillermo prepay?

\[ \frac{600 \cdot 900}{4\text{ mo} \cdot x\text{ mo}} = \frac{3600}{600} = \frac{600x}{600} \]
\[ 6 = x \]

\[ \frac{900}{150} = 6\text{ mo}. \]