

M7 9.1 Practice Solutions

9.1 Solving Proportions

PRACTICE

Directions: Solve each proportion.

1) $\frac{5}{9} = \frac{x}{36}$
 ~~$\frac{5}{9} = \frac{x}{36}$~~
 $9x = 180$
 $\frac{9x}{9} = \frac{180}{9}$
 $x = 20$

2) $\frac{12}{y} = \frac{48}{20}$
 ~~$\frac{12}{y} = \frac{48}{20}$~~
 $\frac{48y}{48} = \frac{240}{48}$
 $y = 5$

3) $\frac{z}{18} = \frac{8}{15}$
 ~~$\frac{z}{18} = \frac{8}{15}$~~
 $\frac{15z}{15} = \frac{144}{15}$
 $z = 9.6$

Directions: Determine whether each situation is a RATIO or a PROPORTION. Set each up. Do not solve.

4) Mr. Sullivan can eat 12 pancakes in 8 minutes. How many pancakes can he eat in 15 minutes?

RATIO OR PROPORTION
 $\frac{12 \text{ pancakes}}{8 \text{ min}} = \frac{x \text{ pancakes}}{15 \text{ min}}$

5) Mr. Brust shoots paper into his wastebasket. He makes 4 shots for every 5 he attempts.

RATIO OR PROPORTION
 $\frac{4 \text{ shots}}{5 \text{ attempts}}$

6) Mr. Kelly pays \$4.00 for 8 Pez dispensers.

RATIO OR PROPORTION
 $\frac{\$4.00}{8 \text{ Pez}}$

Directions: Set up a proportion and then solve. Remember to label your answer.

7) Sully wins 2 out of 3 games he plays against Brust. How many games will they play if he wins 12 games?

$\frac{2 \text{ wins}}{3 \text{ games}} = \frac{12 \text{ win}}{x \text{ games}}$
 $\frac{2x}{2} = \frac{36}{2}$
 $x = 18 \text{ games}$

8) Mr. Kelly guesses right 1 out of every 4 questions he takes on a test. How many questions will he get right if the test has 100 questions?

$\frac{1 \text{ right}}{4 \text{ questions}} \rightarrow \frac{x \text{ right}}{100 \text{ questions}}$
 $\frac{100}{4} = \frac{4x}{4}$
 $25 \text{ right} = x$

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9) Brust can jump 10 times in 30 seconds on his trampoline.

a. How long will it take for him to jump 35 times?

$$\frac{10 \text{ jumps}}{30 \text{ sec}} \rightarrow \frac{35 \text{ jumps}}{x \text{ sec}}$$

$$\frac{10x}{10} = \frac{1050}{10}$$

$$x = 105 \text{ seconds}$$

b. How many jumps will he do in 55 seconds?

$$\frac{10 \text{ jumps}}{30 \text{ sec}} \rightarrow \frac{x \text{ jumps}}{55 \text{ sec}}$$

$$\frac{550}{30} = \frac{30x}{30}$$

$$18.3 \text{ jumps} = x$$

10) Sully can run 2 miles in 46 minutes.

a. How long will it take him to run 7 miles?

$$\frac{2 \text{ miles}}{46 \text{ min}} \rightarrow \frac{7 \text{ miles}}{x \text{ min}}$$

$$\frac{2x}{2} = \frac{322}{2}$$

$$x = 161 \text{ min}$$

b. How many miles can he run in 23 minutes?

$$\frac{2 \text{ miles}}{46 \text{ min}} \rightarrow \frac{x \text{ miles}}{23 \text{ min}}$$

$$\frac{46}{46} = \frac{46x}{46}$$

$$1 \text{ mile} = x$$

11) Mr. Kelly knows that one side of his house is 20 feet long and it takes him six strides to walk the same distance. How long is the other side of his house if it takes him 8.5 strides to walk it?

$$\frac{20 \text{ ft}}{6 \text{ strides}} \rightarrow \frac{x \text{ ft}}{8.5 \text{ strides}}$$

$$\frac{6x}{6} = \frac{170}{6}$$

$$x = 28.3 \text{ ft}$$