

Warm-Up-

1) Write a reflection on how you think you did on the quiz.

This part will be collected.

2) Is the following a proportion?

$$3 \div 7 = \frac{7}{3} \cdot \frac{4}{1} = \frac{28}{3} = \frac{28}{3}$$

Yes

$$\frac{1\frac{1}{6}}{2\frac{1}{3}} = \frac{4}{8}$$

Quiz Remarks:

① $4\frac{1}{3}$ to $7\frac{2}{5}$

$$\frac{13}{3} \div \frac{37}{5}$$

$$\frac{13}{3} \cdot \frac{5}{37} \dots$$

② Lipstick
\$5.50 → \$7

ratio of increase to original

$$\frac{1.50}{5.50} = \frac{150 \div 5}{550 \div 5} = \frac{3}{11}$$

HOMEWORK:

6) \$6 to \$9 (as) \$10 to \$15

ratio b/c all same units

$$\frac{6}{9} = \frac{10}{15}$$

16) $\frac{3 \div 15}{3 \div 48} = \frac{10 \div 2}{24 \div 2}$

$$\frac{5}{16} = \frac{5}{12}$$

FALSE

34) $\frac{3.75}{1\frac{1}{4}} = \frac{7.5}{2\frac{1}{2}}$

$$\frac{3\frac{3}{4}}{1\frac{1}{4}} = \frac{7\frac{1}{2}}{2\frac{1}{2}}$$

$$\frac{5 \cdot 15}{4 \cdot 2} = \frac{15}{4} \cdot \frac{5}{2}$$

$$\frac{15 \cdot 5}{4 \cdot 2} \quad \text{TRUE}$$

5.4 Solving Proportions

When you have a proportion, you traditionally know how many values?

④

FYI- When you know three of them, you can always find the last one

$$\frac{a}{b} = \frac{c}{d}$$

Steps

- Find your cross products
- Set them equal
- Solve for x



Ex 1 Solving Proportions for Unknown Numbers

a)

$$\frac{16}{x} = \frac{32}{20}$$

$$32x = 16 \cdot 20$$

$$\frac{32x}{32} = \frac{320}{32}$$

$$x = 10$$

b)

$$\frac{7}{12} = \frac{15}{x}$$

$$7x = 15 \cdot 12$$

$$\frac{7x}{7} = \frac{180}{7}$$

$$x = 25.71$$

$$\begin{array}{r} 15 \\ 12 \overline{) 30} \\ \underline{30} \\ 0 \end{array}$$

$$\begin{array}{r} 25.71 \\ 7 \overline{) 180.0} \\ \underline{140} \\ 40 \\ \underline{35} \\ 50 \\ \underline{49} \\ 1 \end{array}$$

Ex 2 Solving with Decimals and Mixed Numbers

a)

$$\frac{2\frac{1}{5}}{6} = \frac{x}{10}$$

$$6x = \frac{11}{5} \cdot \frac{10}{1}$$

$$\frac{6x}{6} = \frac{22}{6}$$

$$x = 3\frac{4}{6} = 3\frac{2}{3}$$

b)

$$\frac{1.5}{0.6} = \frac{2}{x}$$

$$1.5x = 2 \cdot 0.6$$

$$\frac{1.5x}{1.5} = \frac{1.2}{1.5}$$

$$x = 0.8$$

$$\begin{array}{r} 2 \\ +0.6 \\ \hline 1.2 \end{array}$$

$$\begin{array}{r} 0.8 \\ 15 \overline{) 120} \\ \underline{120} \\ 0 \end{array}$$

$$\begin{array}{r} 4 \\ \times 1.5 \\ \hline 120 \end{array}$$

Try some now!

1) $\frac{1}{2} = \frac{x}{12}$

3) $\frac{28}{x} = \frac{21}{9}$

5) $\frac{3\frac{1}{4}}{2} = \frac{x}{8}$

7) $\frac{x}{6} = \frac{0.5}{1.2}$

Show your work!

2) $\frac{6}{10} = \frac{15}{x}$

4) $\frac{x}{8} = \frac{3}{5}$

6) $\frac{x}{3} = \frac{1\frac{2}{3}}{5}$

8) $\frac{0.06}{x} = \frac{0.3}{0.4}$