

Warm-Up: What's the Better Buy?

2 qts for \$3.25

$$\begin{array}{r} \$3.25 \\ \hline 2 \text{ qts} \end{array}$$

$$\begin{array}{r} 1.625 \\ 2 \overline{) 3.250} \\ \underline{3.250} \\ 0 \end{array}$$

3 qts for \$4.95

$$\begin{array}{r} 1.65 \\ 3 \overline{) 4.95} \\ \underline{3.0} \\ 195 \\ \underline{180} \\ 150 \\ \underline{150} \\ 0 \end{array}$$

\$1.65 per qt

4 qts for \$6.48

$$\begin{array}{r} 1.620 \\ 4 \overline{) 6.480} \\ \underline{4} \\ 24 \\ \underline{24} \\ 080 \\ \underline{80} \\ 0 \end{array}$$

Quiz on 5.1 and 5.2

a) \$2.99 for 20oz

$$\begin{array}{r} \$2.99 \\ \hline 20_{oz} \end{array}$$

b) \$3.99 for 15oz

$$\begin{array}{r} \$3.99 \\ \hline 15_{oz} \end{array}$$

triple the amount of work

Writing whole # ratios

$$6\frac{3}{4} \text{ to } 1\frac{1}{2}$$

$$\frac{27}{4} \div \frac{3}{2}$$

$$\frac{27}{4} \cdot \frac{2}{3} = \frac{9}{2}$$

$$\frac{\$12.75}{(1) \text{ hr}}$$

unit rate

5.3 Proportions

What is a proportion?

↳ two ratio/rates that are equivalent $\frac{a}{b} = \frac{c}{d}$

Ex 1 Writing Proportions

a) 6ft is to 11ft as 18ft is to 33ft

$$\frac{6ft}{11ft} = \frac{18ft}{33ft}$$

ratio $\frac{6}{11} = \frac{18}{33}$

b) \$9 is to 6 liters as \$3 is to 2 liters

rate $\frac{\$9}{6L} = \frac{\$3}{2L}$

Ex 2 Writing Both Ratios in Lowest Terms (to determine true/false) $= \neq$

a) $\frac{5}{9} = \frac{18 \div 9}{27 \div 9}$

$$\frac{5}{9} = \frac{2}{3}$$

FALSE b/c \neq

b) $\frac{4 \div 4}{4 \div 12} = \frac{28 \div 7}{21 \div 7}$

$$\frac{4}{3} = \frac{4}{3}$$

TRUE b/c $=$

Recall Cross Product:

"cross multiply"

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

$$a \cdot d = b \cdot c$$

Ex 3 Using Cross Product to Determine if Proportion is True/False

a) $\frac{3}{5} = \frac{12}{20}$

$$3 \cdot 20 = 5 \cdot 12$$

$$60 = 60 \quad \text{TRUE}$$

b) $\frac{2\frac{1}{3}}{3\frac{1}{3}} = \frac{9}{16}$

$$\begin{array}{r} 4 \\ \times 16 \\ \hline 112 \end{array}$$

$$2\frac{1}{3} \cdot 16 = 3\frac{1}{3} \cdot 9$$

$$\frac{1}{3} \cdot \frac{16}{1}$$

$$\frac{16}{3}$$

$$= \frac{30}{1}$$

$$\frac{10}{3} \cdot \frac{9}{1}$$

FALSE