

WarmUp: 3-1

1/6

Express each ratio or rate in simplest form

1.) 8 out of 12

think $\frac{8 \div 4}{12 \div 4} = \left(\frac{2}{3}\right)$

Answer: 2 out of 3

2.) 12 girls: 20 students

3 girls: 5 students

3.) 9 inches per foot

already simple

Express each rate as a unit rate

4.) \$17.40 in 3 hours

\$5.80 per hour

$\frac{\$17.40}{3 \text{ hours}} = \frac{\$5.80}{1 \text{ hour}}$

5.) \$0.56 for 16 radishes

\$0.035 per radish

Notes: 3-3 Solving Proportions 1/6

Proportion: two ratios are equivalent

To figure out if 2 ratios are equivalent, set them equal to each other, and cross multiply. If the #'s are =, they are a proportion.

ex: $\frac{2}{3} ; \frac{8}{12}$

① Set them equal to each other

$$\frac{2}{3} = \frac{8}{12}$$

② Cross multiply

$$\frac{2}{3} = \frac{8}{12}$$

$$3 \cdot 8 = 2 \cdot 12$$

③ Multiply

$$3 \cdot 8 = 2 \cdot 12$$
$$24 = 24$$

④ Since $24 = 24$ (# equals itself) it IS a proportion.

Answer: Yes, $\frac{2}{3}$ and $\frac{8}{12}$ are proportional.

Notes: 3-3 Cont.

1/6

Two Types of Questions:

① Determine if 2 ratios form a proportion

ex: $\frac{3}{4}$, $\frac{75}{100}$

~~$\frac{3}{4} = \frac{75}{100}$~~

$3 \cdot 100 = 4 \cdot 75$

$300 = 300$

✓ (yes)

② Solve

ex ~~$\frac{3}{5} = \frac{c}{10}$~~

$5 \cdot c = 3 \cdot 10$

$5 \cdot c = 30$

$c = 6$

Notes: 3-3 cont.

1/6

Try This:

① Do the pair of ratios form a proportion?

(a) $\frac{16}{12} \stackrel{?}{=} \frac{12}{9}$

(a) yes

(b) $\frac{3}{11} ; \frac{55}{200}$

(b) no

② Solve for x

(a) $\frac{4}{100} = \frac{12}{x}$

(a) $x = 300$

(b) $\frac{2}{3} = \frac{7}{x}$

(b) $x = 10.5$

HW: p 113 #s 11, 13, 15, 18, 20, 21,
22, 24, 25