

## 5.7 Comparing Ratios

Friday, December 4, 2015 9:52 AM

## Unit 5: Percent, Ratio, and Rate

Math 8

### 5.7 Comparing Ratios

There are three ways that we can compare ratios:

- Draw a picture
- Use equivalent ratios with either the 1<sup>st</sup> or 2<sup>nd</sup> term being common.
- Use equivalent ratios with one of the terms being 1.

$a:b$   $c:d$

#### Examples

1. Recipe A for punch calls for 2 cans of concentrate and 3 cans of water.

Recipe B for punch calls for 3 cans of concentrate and 4 cans of water.

Use equivalent ratios to determine which punch is stronger.

A Concentrate : Water =  $\overset{w}{2} : \overset{w}{3}$  Multiples for 3 and 4:  
Multiples of 3: 3, 6, 9, 12, 15, 18...

B Concentrate : Water =  $\overset{w}{3} : \overset{w}{4}$  Multiples of 4: 4, 8, 12, 16, 20...

Since we are looking for the stronger punch, we could make the amount of water the common term and then compare the number of cans of concentrate.

A Concentrate : Water =  $2:3 = (2 \times 4):(3 \times 4) = 8:12$

B Concentrate : Water =  $3:4 = (3 \times 3):(4 \times 3) = 9:12$  Recipe B is stronger because it requires more concentrate than Recipe A.

OR

We could also use equivalent ratios with one of the terms being reduced to 1.

A Concentrate : Water =  $2:3 = \frac{2}{3} : \frac{3}{3} = 0.\overline{6} : 1$

B Concentrate : Water =  $3:4 = \frac{3}{4} : \frac{4}{4} = 0.75 : 1$

Recipe B is stronger because it requires more concentrate than Recipe A.

2. Erica makes her coffee with 2 scoops of coffee to 5 cups of water.

Jim makes his coffee with 3 scoops of coffee to 7 cups of water.

Draw a picture to determine who makes stronger coffee.

Erica



$2:5$

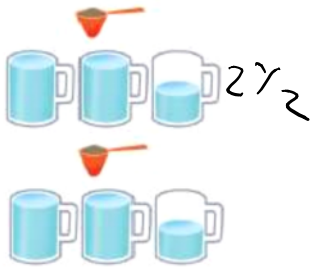
Jim



$3:7$

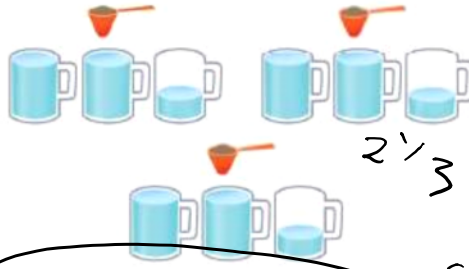
Find out how much water is used for 1 scoop of coffee.

Erica



Coffee : Water =  $2 : 2\frac{1}{2}$

Jim



Coffee : Water =  $2 : 2\frac{1}{3}$

Stronger coffee b/c  
Jim uses less water.

Jim makes the stronger coffee because he uses less water than Erica.

~~Using equivalent ratios:~~

~~Erica~~

~~Coffee : Water~~  
~~2 : 5~~

~~Jim~~

~~Coffee : Water~~  
~~3 : 7~~