

Section 5.4 Notes: Comparing and Graphing Ratios

When comparing Ratios there are three different methods you can pick between:

Method 1: Comparing the Ratios

You mix 4 drops of flavoring into 12 ounces of water. You mix 7 drops of flavoring into 18 ounces of water. Which mixture has more flavor?

Mixture 1

Drops of Flavoring	4	12
Ounces of Water	12	36

Mixture 2

Drops of Flavoring	7	14
Ounces of Water	18	36

Find the LCM of 12 & 18 to find the first common amount

12, 24, 36
18, 36

* Mixture 2 has more flavor because at the common amount of 36 ounces of water 14 is more than 12.

Method 2: Comparing the Unit Rates

You mix 4 drops of flavoring into 12 ounces of water. You mix 7 drops of flavoring into 18 ounces of water. Which mixture has more flavor?

* unit rate will calculate the drops of flavor for 1 ounce of water

Mixture 1

$$\begin{array}{r} .33 \\ 12 \overline{) 4.000} \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 40 \\ \underline{-36} \\ 4 \end{array}$$

0. $\overline{3}$ drops for 1 ounce

Mixture 2

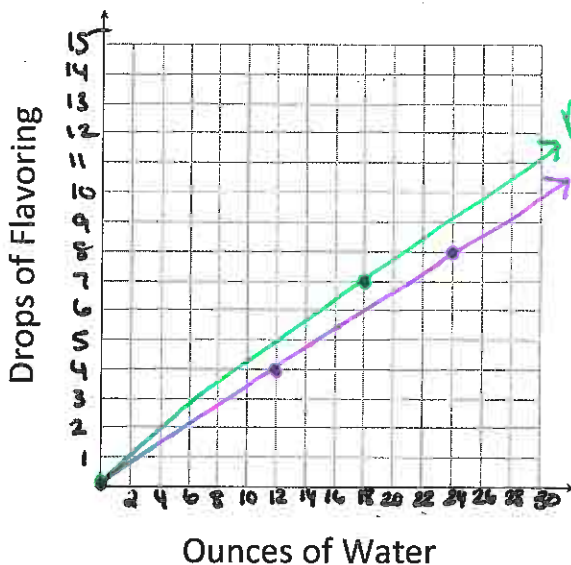
$$\begin{array}{r} .388 \\ 18 \overline{) 7.000} \\ \underline{-54} \\ 160 \\ \underline{-144} \\ 160 \\ \underline{-144} \\ 16 \end{array}$$

0. $\overline{38}$ drops for 1 ounce

* Mixture 2 has more flavor because 0.38 is larger than 0. $\overline{3}$ drops per ounce

Method 3: Comparing Graphs

You mix 4 drops of flavoring into 12 ounces of water. You mix 7 drops of flavoring into 18 ounces of water. Which mixture has more flavor?



Mixture 2 7 drops for 18 ounces
Mixture 1 4 drops for 12 ounces

Mixture 2 has more flavor as the graph is steeper/above the graph for mixture 1, letting us know there is more flavor.

Example:

An 8 pound bag of dog food costs \$40. You can buy the same brand of dog food in a 10 pound bag for \$45. Which is the better buy? Explain your reasoning.

Method 1: Comparing the Ratios

8 pound Bag		
Weight	8 $\times 5 \rightarrow$	40
Cost	\$40 $\times 5 \rightarrow$	200

10 pound Bag		
Weight	10 $\times 4 \rightarrow$	40
Cost	\$45 $\times 4 \rightarrow$	180

Find the LCM between 8 and 10 to find a common amount
8, 16, 24, 32, 40, 48,
10, 20, 30, 40, 50

*The 10 pound bag is a better buy because it costs less to buy the same amount of dog food.

Method 2: Comparing the Unit Rates

8 pound Bag: \$40 for 8 pounds \rightarrow \$5 for 1 pound

10 pound Bag: \$45 for 10 pounds \rightarrow \$4.50 for 1 pound

$$\begin{array}{r} 4.5 \\ 10 \overline{)45.0} \\ \underline{40} \\ 50 \\ \underline{50} \\ 0 \end{array}$$

*The 10 pound bag is a better buy because the unit rate (price per pound) is lower.

Method 3: Comparing Graphs

The 10 pound bag is a better buy because the graph is below the 8 pound bag representing a lower/cheaper price.

Which one is the better buy? Explain your reasoning based off the method you like using. (see the reasoning in each method above)