

# Ch. 5.2 NOTES

Equivalent ratios: describe the SAME ratio  
 $\frac{1}{2}, \frac{2}{4}, \frac{3}{6}$

ratio table: organizes your ratios

Boys	10	20	30
Girls	15	30	45

## Example 1 - Completing ratio tables

Find the missing value(s) in each ratio table. Then write the equivalent ratios.

a.

Pens	1	2	3
Pencils	3	6	9

b.

Dogs	4	8	24
Cats	6	12	36

equivalent ratios

$$\frac{1}{3}, \frac{2}{6}, \frac{3}{9}$$

$$\frac{4}{6}, \frac{8}{12}, \frac{24}{36}$$

## On Your Own

1.

Plantains	4	8	12
Bananas	3	6	9

2.

Euros	5	10	40
Dollars	4	8	32

$$\frac{4}{3}, \frac{8}{6}, \frac{12}{9}$$

$$\frac{5}{4}, \frac{10}{8}, \frac{40}{32}$$

## Example 2 making a Ratio Table

You are making sugar water for your hummingbird feeder. A website indicates to use 4 parts of water for every 1 part of sugar. You use 20 cups of water. How much sugar do you need?

Water (cups)	4	20	
Sugar (cups)	1	5	

5 cups  
of sugar

## On Your Own

3. **WHAT IF?** You use 24 cups of water. How much sugar do you need?
4. You make a sweeter mixture of sugar water for your hummingbird feeder using 3 parts of water for every 1 part of sugar. You use 9 <sup>cups</sup> of water. How much sugar do you need?

6 cups

Water	4	24	
sugar	1	6	

water	3	9	
sugar	1	3	

3 cups of  
sugar

Questions?



### EXAMPLE 3 Using a Ratio Table



The nutrition facts label on a box of crackers shows that there are 240 milligrams of sodium in every 36 crackers.

a. You eat 15 crackers. How much sodium do you consume?

The ratio of sodium to crackers is 240 to 36.  
Use a ratio table to find an equivalent ratio with 15 crackers.

Sodium (milligrams)	240	120	20	100
Crackers	36	18	3	15

Handwritten annotations above the table:  $\div 2$  (from 240 to 120),  $\div 6$  (from 36 to 18),  $\times 5$  (from 20 to 100).  
Handwritten annotations below the table:  $\div 2$  (from 36 to 18),  $\div 6$  (from 18 to 3),  $\times 5$  (from 3 to 15).



The ratio 100 to 15 is equivalent to 240 to 36.

So, you consume 100 milligrams of sodium.

b. You eat 21 crackers. How much sodium do you consume?

Notice that you can add the two middle columns in the table above.

So, you consume  $120 + 20 = 140$  milligrams of sodium in  $18 + 3 = 21$  crackers.

#### Study Tip

In Example 3, notice that you could use one step in the ratio table: multiply by

$$\frac{1}{2} \cdot \frac{1}{6} \cdot 5 = \frac{5}{12}$$

### Practice

Find the missing value(s) in the ratio table. Then write the equivalent ratios.

6.

Boys	1	2
Girls	5	10

Handwritten:  $\frac{1}{5}, \frac{2}{10}$

8.

Taxis	6	18	36
Buses	5	15	30

Handwritten:  $\frac{6}{5}, \frac{18}{15}, \frac{36}{30}$

10.

Towels	14	7	28
Blankets	8	4	16

Handwritten:  $\frac{14}{8}, \frac{7}{4}, \frac{28}{16}$

7.

Violins	8	24
Cellos	3	9

Handwritten:  $\frac{8}{3}, \frac{24}{9}$

Burgers	3	6	9
Hot Dogs	5	10	15

Handwritten:  $\frac{3}{5}, \frac{6}{10}, \frac{9}{15}$

11.


Forks	16	8	48
Spoons	10	5	30

Handwritten:  $\frac{16}{10}, \frac{8}{5}, \frac{48}{30}$

## 5.2 Practice A

Write and describe several ratios for the following


1.



Paperclips	9		
Note cards	3		

$\times 2$     $\times 3$

2.



Books			
Pencils			

Find the missing value in the ratio table.

3.

Cars	Trucks
3	5
6	

$\times 2$  (   )  $\times 2$

4.

TVs	Computers
2	7
	21

$\times$  (   )  $\times$

Complete the ratio table to solve the problem.

5. For every 2 cars you wash, your friend washes 3 cars. You wash a total of 8 cars. How many does your friend wash?

You	Friend
2	3
8	

6. Your closet has 5 shirts for every 2 sweaters. Your closet has 30 shirts. How many sweaters are in your closet?

Shirts	Sweaters
5	2
10	
	10
30	

7. You are making a salad. The ratio of olives to croutons is 5 : 3. You put 12 croutons in your salad. How many olives do you put in your salad?

Olives	croutons
5	3
	12

$\times$  (   )  $\times$