

# Simplifying Ratios

## Introduction to Ratios

A ratio is a relationship between two numbers or quantities. In this unit, you will learn how to identify ratios and simplify them.

### EXAMPLES:

For every flashlight, there are 5 batteries.	1 flashlight	:	5 batteries
	1	:	5
For every three minutes, \$5 is made.	3 minutes	:	\$5
	3	:	5
For every 7.5 minutes, Sam writes for 4 minutes.	7.5 mins (time)	:	4 mins (writing)
	7.5	:	4

## Simplifying Ratios

Ratios are simplified by dividing both sides by the **HCF (highest common factor)**.

The ratio 2:6 is simplified to 1:3 using  $HCF = 2$

This is the same as simplifying a fraction.

**Instructions:** Simplify the ratios below.

1	For every 2 burgers sold at a shop, 4 drinks are sold. What is the ratio of burgers to drinks sold?	
2	For every 3 lemon lollies in a bag, there are 6 grape lollies. What is the ratio of grape to lemon lollies?	



3	It costs \$9 for every 3 rides at a carnival. What is the ratio of the number of rides to cost?	
4	For every 12 points Peter gets in a game, Hailey gets 4. What is the ratio of Hailey's points to Peter's?	
5	For every 4 minutes at a store, 16 items are sold. What is the ratio of time to number of items sold?	
6	For every 8 apples, there are 30 grapes. What is the ratio of grapes to apples?	
7	For every 9 gold coins, there are 21 silver coins. What is the ratio of silver to gold coins?	
8	For every 12 dogs, there are 14 cats. What is the ratio of dogs to cats?	
9	For every 30 females, there are 55 males. What is the ratio of males to females?	



10	For every 72 students, 12 students have black hair. What is the ratio of the number of students to those with black hair?	
11	For every 18 goals Thomas scores, he misses 24 goals. What is Thomas' score-to-miss ratio?	
12	For every 32 black cups, there are 48 red cups. What is the ratio of red to black cups?	
13	For every 36 t-shirts sold at a store, 54 pants are sold. What is the ratio of the number of pants to t-shirts sold?	
14	For every 42 onions, there are 84 potatoes. What is the ratio of onions to potatoes?	
15	For every 66 pumpkins sold at a grocery store, 72 pineapples are sold. What is the ratio of pumpkins to pineapples sold?	
16	For every 96 roses, there are 60 sunflowers. What is the ratio of roses to sunflowers?	

## Simplifying Ratios

### Introduction to Ratios

A ratio is a relationship between two numbers or quantities. In this unit, you will learn how to identify ratios and simplify them.

#### EXAMPLES:

For every flashlight, there are 5 batteries.

1 flashlight	:	5 batteries
1	:	5

For every three minutes, \$5 is made.

3 minutes	:	\$5
3	:	5

For every 7.5 minutes, Sam writes for 4 minutes.

7.5 mins (time)	:	4 mins (writing)
7.5	:	4

### Simplifying Ratios

Ratios are simplified by dividing both sides by the **HCF (highest common factor)**.

The ratio 2:6 is simplified to 1:3 using  $HCF = 2$

This is the same as simplifying a fraction.

**Instructions:** Simplify the ratios below.

1	For every 9 black horses, there are 15 white horses. What is the ratio of black to white horses?	
2	For every 30 circles in a pattern, there are 12 triangles. What is the ratio of triangles to circles?	



3	For every 20 boys in a class, there are 14 girls. What is the ratio of boys to girls?	
4	For every 48 dogs, there are 32 cats. What is the ratio of cats to dogs?	
5	For a dozen donuts, it costs \$20. What is the ratio of number of donuts to cost?	
6	60 people enter a gym every 24 minutes. What is the ratio of the number of people who enter the gym to time?	
7	For every 48 slices of watermelon, there are 132 seeds. What is the ratio of seeds to watermelon slices?	
8	55 cans of tuna and 121 crackers are eaten. What is the ratio of cans of tuna to crackers eaten?	
9	For every 160 loaves of bread a baker makes, he sells 120 of them. What is the ratio of loaves made to loaves sold?	



10	For every 45 boxes of cereal sold, 42 litres of milk are sold. What is the ratio of litres of milk to cereal boxes sold?	
11	For every 640 boys, there are 960 girls. What is the ratio of boys to girls?	
12	For every 50 litres of petrol, it costs \$72. What is the ratio of cost to litres of petrol?	
13	For every 600 grams of flour, a cake mix requires 150 grams of sugar. What is the ratio of sugar to flour in this mix?	
14	A car travels 1080 metres every 60 seconds. What is the ratio of time to distance travelled?	
15	An ice-cream shop makes \$490 per hour selling 140 scoops. What is the ratio if number of scoops to revenue?	
16	It costs \$6.40 for 16 lollipops. What is the ratio of cost to the number of lollipops?	