

What do you know about ratios?

Ratios

A ratio is a comparison between two or more things. There are three forms in which you can write a ratio:

- 1) using a colon, 4 : 7
- 2) using the word "to", 4 to 7
- 3) as a fraction, $\frac{4}{7}$

In each case, it is read as 4 to 7. A ratio does not mean much if you do not know what you are comparing. Therefore, it is always **important to state above the ratio what you are comparing:**
boys to girls

4 to 7

Also, **order is very important with ratios** The ratio boys to girls is not the same as the ratio of girls to boys, because they are not in the same order.

You can have a two term or three term ratio.

A **part to part ratio** is comparing one part of a collection to another part, for example boys to girls. A part to part ratio can not be written as a fraction.

A **part to whole ratio** is comparing one part of the collection to the whole collection, such as boys to all students.

Three-Term Ratio: compare three quantities to each other

You can find **equivalent ratios the same way you find equivalent fractions**, multiply (or divide) each term by the same number.

ex. boys to girls an equivalent ratio is: b : g

$$\begin{array}{c} \times 2 \quad \left(\begin{array}{c} 4 \text{ to } 7 \\ 8 : 14 \end{array} \right) \times 2 \end{array}$$

Putting a ratio in lowest terms, is the same as putting a fraction in lowest terms, divide by a common factor, until the terms have no more common factors.



Two-Term Ratio

1. part-to-whole ratio

basketballs : Total Balls
7 : 20

tennis balls : Total Balls
8 : 20

golf balls : Total Balls
5 : 20

2. part-to-part ratio

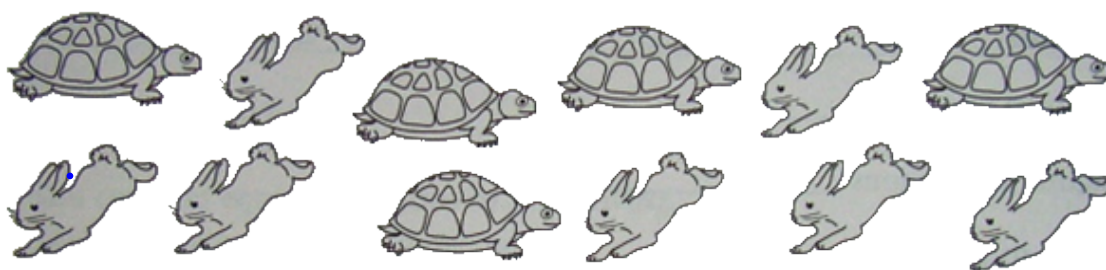
golf balls : tennis Balls
5 : 7

Three-Term Ratio

basket balls : tennis balls : golf Balls
7 : 8 : 5

there are more solutions

Write each part-to-whole ratio as a ratio, a fraction and a percent.
Round percents to 2 decimal places.



Turtle : Total animals
5 : 12

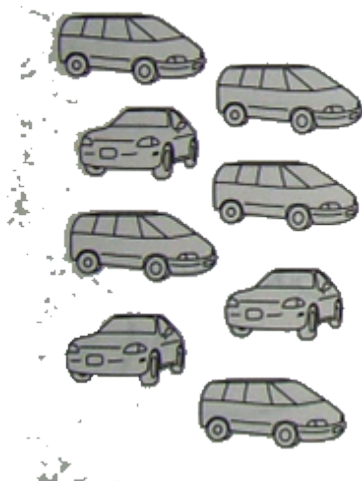
$$\frac{5}{12} \approx 0.42$$
$$\approx 42\%$$

rabbits : Total animals
7 : 12

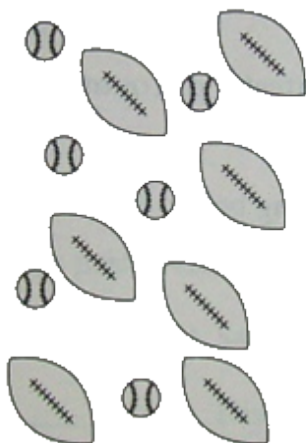
$$\frac{7}{12} \approx 0.58$$
$$\approx 58\%$$

Write each part-to-part ratio.

$3 : 8$
a) cars to vans



$7 : 6$
b) footballs to baseballs



$5 : 9$ *↙ w hole*
c) bananas to fruit



At a class party, there are 16 boys, 15 girls, and 4 adults.
Show each ratio as many ways as you can.

a) boys to girls

b) boys to girls to adults

c) adults to total number of people at the party

$$\begin{array}{r} \text{Total} \\ = 16 \\ + 15 \\ + 4 \\ \hline 35 \end{array}$$

a) $B:G$
 $16:15$

b) $B:G:A$
 $16:15:4$

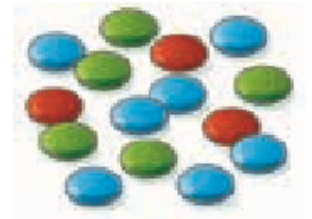
c) $A: \text{Total}$
 $4:35$

Class/Homework

Homework pg. 266 #4ab, 5ab, 6, 8, 11a, b
solution
to 4a $5:8$ $\frac{5}{8}$

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4. Write each part-to-whole ratio as a fraction.
a) 5:8 b) 12:16 c) 4:9 d) 24:25
5. Write each part-to-whole ratio as a percent.
a) 19:20 b) 12:15 c) 3:8 d) 5:6

6. Look at the candy-covered chocolates below. Explain what each ratio means.
- a) 3:5
b) 7:5
c) 5:15
d) 3:5:7
e) 3:12



Apply

- 8.** The ratio of T-shirts to shorts in Frank's closet is 5:2.
- Write the ratio of T-shirts to the total number of garments.
 - Write the ratio in part a as a percent.
- 9.**
- Write a part-to-part ratio to compare the items in each sentence.
 - A student had 9 green counters and 7 red counters on his desk.
 - In a dance team, there were 8 girls and 3 boys.
 - A recipe called for 3 cups of flour, 1 cup of sugar, and 2 cups of milk.
 - Write a part-to-whole ratio for the items in each sentence in part a. Express each ratio as many ways as you can.
- 11.** A box contains 8 red, 5 green, 2 orange, 3 purple, 1 blue, and 6 yellow candies.
- Write each ratio.
 - red:purple
 - green:blue
 - purple:blue:green
 - orange and yellow:total candies
 - Suppose 3 red, 2 green, and 4 yellow candies were eaten. Write the new ratios for part a.

Attachments

Quiz on Percents (Mid Unit Feb 25).pdf