



Grade 8 Warm Up

Mar. 19, 2018

1) The ratio of cats to dogs at the animal shelter is 4 to 5.
How many cats could there be? How many dogs?
Write four different answers.

Cats : Dogs

$$\begin{array}{l} 4 : 5 \\ \times 2 \quad \times 2 \\ \hline 8 : 10 \\ \times 3 \quad \times 3 \\ \hline 12 : 15 \\ 16 : 20 \\ 20 : 25 \end{array}$$



2) The length-to-width ratio of Colby's poster is 3:2.
The poster is 90 cm long. How wide is it?

L : W

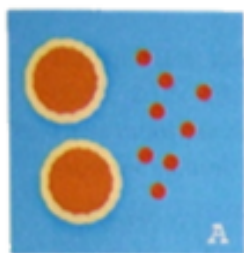
$$\begin{array}{l} 3 : 2 \\ \times 30 \quad \times 30 \\ \hline 90\text{cm} : \underline{60\text{cm}} \end{array}$$



Grade 8 Warm Up

Mar. 16, 2018

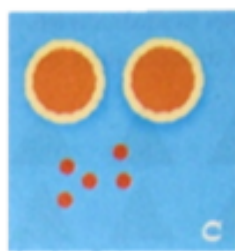
Write the ratio of pepperoni pieces to pizza for each picture?



pep : pizza
 $8 : 2$
 $\div 2 \leftarrow$ $\rightarrow \div 2$
 $4 : 1$



pep : pizza
 $9 : 3$
 $3 : 1$



pep : pizza
 $5 : 2$

Mental Math

My thinking
 35×2

1) 3500×20
 70000

2) $(-8) - (+5)$
 $\downarrow \downarrow$
 add over
 $(-8) + (-5)$
 -13

2) $\$6.93 + \$5.98 \Rightarrow 13$
 $\downarrow \downarrow$
 over 5¢ by 7 cents over estimate 2 cents
 over 9 cents

3) 3.5×4
 Half and double
 $\downarrow \downarrow$
 7×2
 14

4) 454×100
 45400

$= \$12.91$

Equivalent Ratios

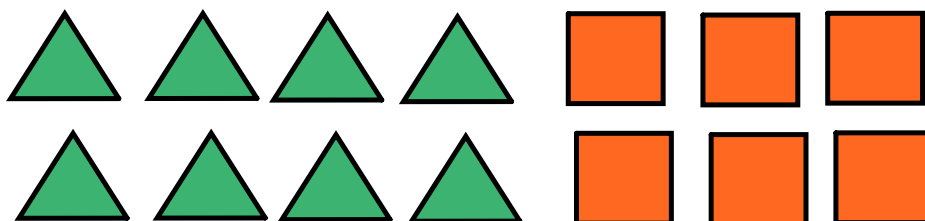
How do you find equivalent fractions?



What is the ratio of triangles to squares?

Triangles to squares
4 to 3

for every 4 triangles there is 3 squares



Triangles to squares
8 to 6

4 to 3 = 8 to 6. These are called equivalent ratios. Equivalent ratios are equal.

To find equivalent fractions, multiply (or divide) all terms by the same number.

You can find **equivalent ratios** by dividing.
Divide the terms by the same number.

1st Term	20	10	4	2	
2nd Term	30	15	6	3	

Three equivalent ratios of 20:30 are:

10 : 15
4 : 6
2 : 3

To write a ratio in its simplest form, divide the terms by their GCF.

$$\begin{array}{c} 21:14 \\ \swarrow \div 7 \quad \searrow \div 7 \\ 3 : 2 \end{array}$$

A ratio is in simplest form when its terms have no common factors.

Examples

$$4:10, 8:20, 12:24$$

1. Write 3 ratios equivalent to 2:5.

$$\begin{array}{l} \times 2 \rightarrow 2:5 \\ \times 3 \rightarrow 4:10 \\ \times 4 \rightarrow 6:15 \\ \times 5 \rightarrow 8:20 \end{array}$$

2. Write 3 ratios equivalent to 36:6.

$$\begin{array}{l} \div 2 \rightarrow 18:3 \\ \div 3 \rightarrow 6:1 \\ \times 5 \rightarrow 30:5 \end{array}$$

3. Construction kits come in different sizes. The regular kit contains 120 long rods, 80 short rods and 40 connectors. List 3 other kits that could be created with the same ratio of rods and connectors.

Long Rods : Short Rods : Connectors

$$120:80:40$$

$$\begin{array}{l} \div 10 \\ \div 20 \\ \div 40 \end{array} \begin{array}{l} 12:8:4 \\ 6:4:2 \\ 3:2:1 \end{array}$$

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1. Answer will vary
Students' opinion
2. A ratio is in simplest form if
a) there are no common factors in the terms.
b) Example 1 is simplest form,
Ex 2 is not.

4. Are $3:2$ and $2:3$ the same?
★
Order is important, so no the ratios are not the same.

5 a) $1:2$
★ ★ $2:4, 4:8, 8:16$

★ b) $2:3$
 $4:6, 40:60, 10:15$

★ c) $1:4$
 $2:8, 4:16, 10:40$

$$6 \text{ a) } 3:4$$

$$\star 30:40, 6:8, 12:16$$

$$\star \text{ b) } 14:4$$

$$28:8, 42:12, 7:2$$

$$\star \text{ c) } 24:25$$

$$240:250, 48:50, 72:75$$

$$7 \text{ a) } 1:3:6$$

$$\star 2:6:12, 4:12:24, 3:9:18$$

$$\star \text{ b) } 12:5:7$$

$$24:10:14, 36:15:21, 48:20:28$$

$$\star \text{ c) } 24:4:8$$

$$12:2:4, 240:40:80, 6:1:2$$

$$\star 8 \text{ a) } 5:15$$

$$1:3$$

$$\star \text{ b) } 6:9$$

$$2:3$$

$$\star \text{ c) } 3:12:18$$

$$1:4:6$$

$$\star \text{ d) } 110:70:15$$

$$22:14:3$$

9 a) chairs : tables

$$\star \quad 32 : 8$$

$$4 : 1$$

★ b) Amer cars : Jap. cars

$$4 : 12$$

$$1 : 3$$

★ c) blue paint : yellow paint : white paint

$$6 : 2 : 1$$

★ d) Canadian stamps : Amer stamps : Asian stamps

$$12 : 24 : 9$$

$$4 : 8 : 3$$

10 a) $2 : 7 = \frac{\quad}{8} : 28$

$$\star \quad \begin{array}{cc} \times 4 & \times 4 \\ 2 & 7 \end{array} = \frac{\quad}{8} : 28$$

★ b) $5 : 12 = 25 : \frac{\quad}{60}$

$$\star \quad \begin{array}{cc} \times 5 & \times 5 \\ 5 & 12 \end{array} = 25 : \frac{\quad}{60}$$

★ c) $\frac{\quad}{40} : 24 = \frac{5}{\quad} : \frac{3}{\quad}$

$$\star \quad \frac{\quad}{40} : 24 = \frac{5}{\times 8} : \frac{3}{\times 8}$$

★ d) $3 : \underline{7} : 11 = 30 : 70 : 110$

$$\star \text{!!} \quad 2:3:4 = 6:9:12$$

$$8:5:4 = 16:10:8$$

$$3:2:1 =$$

$$3:6:9 = 1:2:3$$

$$5:8:4$$

$$9:12:15 = 3:4:5$$

\star b) They are equivalent if each term is multiplied or divided by the same number.

12. non fiction: fiction

$$3:1$$

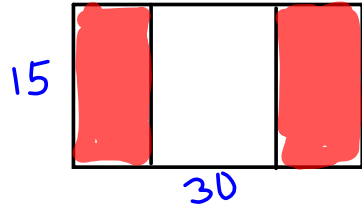
$$300:100$$

$$1500:500$$

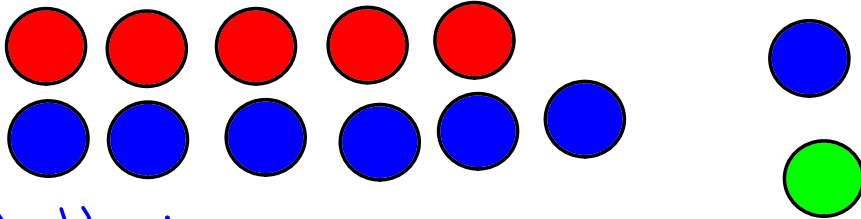
b) There are numerous answers, depending on the size of the library.

13. Length: width
 $\frac{2}{20} : \frac{1}{10}$
 $30 : 15$

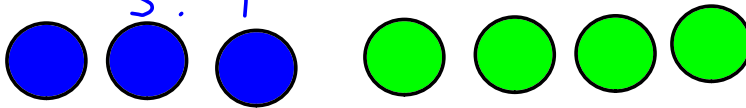
- largest from the sheet of paper



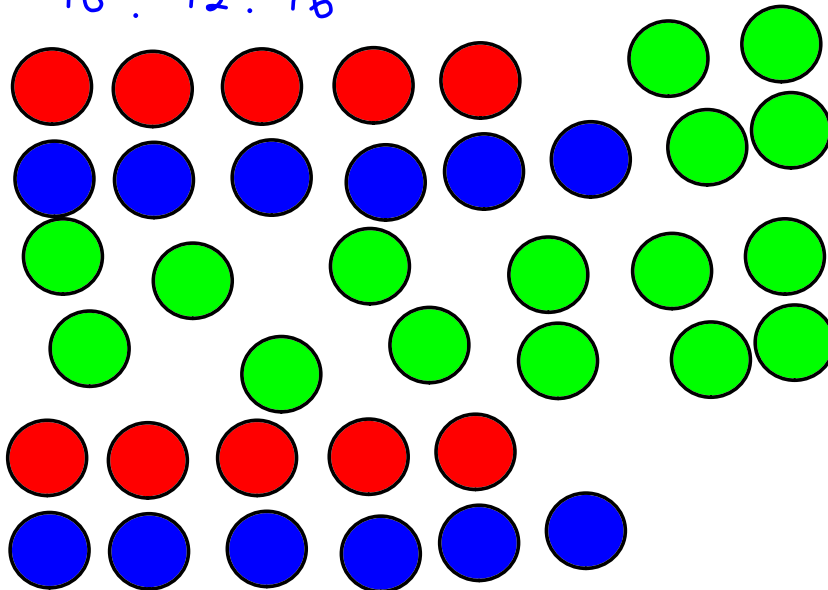
14. red : blue
 $5 : 6$



b) blue : green
 $3 : 4$



c) red : blue : green
 $10 : 12 : 16$



(b) $\frac{10}{10} : \frac{12}{12} : \frac{16}{16}$
 satisfies all 3.

Class/Homework

3 out of 4 book are non-fiction

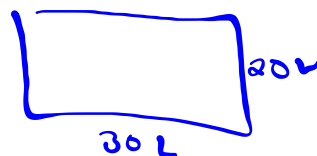
Non-fic to total books

$$\begin{array}{rcl} 3 & : & 4 \\ 30 & : & 40 \\ 60 & : & 80 \\ 9 & : & 12 \end{array}$$

← lean out b

Page ~~274~~ 275 #12, #13, #14, #15, #16, #17

13) Flag L:W
 $2:1$
 $\times 15 \rightarrow 30\text{cm} : 15\text{cm} \times 15$



Flag 30 x 15 cm
 and fit on 30 cm x 20 cm

16) G:B:Total
 $5:3:8$
 $20:12:32 \times 4$

Alex
 is
 Clapped

17) c) $68:85$
 $\times 5.6 \rightarrow 12 : 15 \div 5.6$
 $85 \div 15 = 5.6$