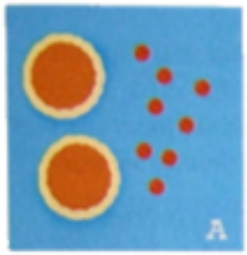
Grade 6 Warm Up

Jan. 17, 2020

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



Pepperoni : Pizza
8 : 2

Pepperoni : Pizza
9 : 3

Pep : Pizza
5 : 2

Mental Math

1) 3500 x 20

2 x 35 = 70

70 000

2) (-8) – (+5)

spent $8
spent another $5
Spent $13
-13

2) $6.93 + $5.98

6.93
+5.98

5 + 6 = 13

= 12.91

7 cents too much

2 cents too much

9¢ over

$12.91

3) 3.5 x 4

3 5
x 4
140

3.5 x 4
↓ double ↓ half
7 x 2
14

4) 454 x 100

45400

Practice

1. Write each ratio 2 ways.
   a) apples to pears

Apples to Pear

4 to 3

4 : 3

   b) caps to scarves

Hats to Scarves

5 to 6

5 : 6

   c) roses to daisies

Roses to Daisies

1 to 4

1 : 4

2. Write a ratio to show the numbers of:
   a) ladybugs to ants
   b) ants to ladybugs
   c) ladybugs to insects
   d) ants to insects

a) Ladybugs to ants

3 : 7

b) Ants to Ladybugs

7 : 3

c) Ladybugs to insects

3 : 10

d) Ants to Insects

7 : 10

3. Write each ratio in as many ways as you can.
   a) red marbles to green marbles
   b) green marbles to all the marbles
   c) green marbles to red marbles
   d) red marbles to all the marbles

a) Red: Green

10 : 4

b) Green : All

4 : 14

c) Green: Red

4 : 10

d) Red : All

10 : 14

4. Ms. Zsabo has 13 girls and 11 boys in her class. Write each ratio.
   a) girls to boys
   b) boys to girls
   c) boys to students
   d) girls to students

a) G : B

13: 11

b) B : G

11: 13

c) B : Stu

11: 24

d) G : Stu

13: 24

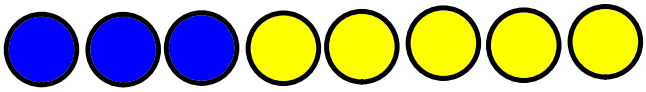
5. What is being compared in each ratio?

a) 3:4 Cats: Dogs b) $\frac{4}{7}$ Dogs: Pets

c) 3 to 7 Cats: Pets d) 4:3 Dogs: Cats

3 to 5

6. Use counters to model the ratio 3:5 in 2 different ways.
Draw diagrams to record your work.
Explain each diagram.



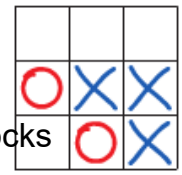
Blue : whole

3: 8

Yellow : whole

5 : 8

7. Write 4 different ratios for this picture.
Explain what each ratio compares.



X:O

3:2

O:X

2:3

X: Total Blocks

3: 9

O: Total Blocks

2: 9

8. A penny can show heads or tails.
Place 10 pennies in a cup. Shake and spill.
Write as many ratios as you can for the pennies.

9. Write a ratio to show the numbers of:

a) triangles to squares 2:3

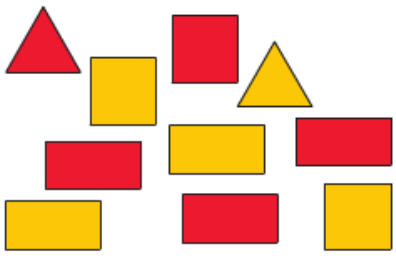
b) squares to rectangles 3:4

c) triangles to all shapes 2:10

d) red shapes to yellow shapes 5:5

e) yellow triangles to yellow rectangles 1:2

f) red triangles to yellow squares 1:2



10. Write as many ratios as you can for the trail mix recipe.
Explain what each ratio compares.

Raisins: nuts: papaya: Seeds

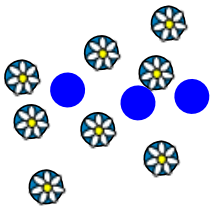
1 : 3 : 2 : 1

11. Use 11 counters to show each ratio.
Sketch counters to record your work.

a) 5:6

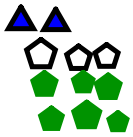
stars: face

b) 8 to 3



Flower: Rainbow

c) $\frac{2}{11}$



Triangle: all shapes

d) 6:11

Green Pentagons: all shapes

Counter has 2 sides → Red / Yellow

11 counters total

a) 5 : 6
R : Y

RRRRR YYYYYY

b) 8 : 3
R : Y

RRRRRRRR
YYY

c) $\frac{2}{11}$ ← whole

$\frac{R}{\text{whole}}$

RRYYY
YYYYY
Y

Name : _____ Score : _____

Ratio In Three Ways: Part to Part

Sheet 1

Write the ratio in three different ways.

1) Books to pens

Words : book : Pen
Ratio : 6:5
Fraction : _____

2) Pumpkins to cabbages

Words : Pumpkin : Cabbage
Ratio : 2:7
Fraction : _____

3) Spiders to ladybugs

Words : Spider:Ladybug
Ratio : 5:3
Fraction : _____

4) Apples to mangosteens

Words : Apple:Mango
Ratio : 4:7
Fraction : _____

5) Snow cones to chocolates

Words : Snow:Chocolate
6:2 Ratio : 3:1
Fraction : _____

Printable Math Worksheets @ www.mathworksheets4kids.com

Name : _____ Score : _____

Ratio: Part to Part

Level 1: S1

1)

The ratio of  to  = 4:3

2)

The ratio of  to  = 1:4

2:8

3)

The ratio of  to  = 4:5

4)

6:3

The ratio of  to  = 2:1

5)

The ratio of  to  = 3:2

Printable Math Worksheets @ www.mathworksheets4kids.com

Name : _____ Score : _____

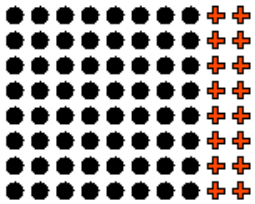
Teacher : _____ Date : _____

Find the Ratios

What is the ratio of ♡ to ✚ ? = 28 : 56 = 4:8 = 1 : 2

What is the ratio of ✚ to (♡ + ✚) ? = 56 : 84 = 28 : 42 = 14 : 21 = 2 : 3

28+56=84 total objects



What is the ratio of ● to ✚ ? = 64 : 16 = 8 : 2 = 4:1

What is the ratio of ✚ to (● + ✚) ? = 16 : 80 = 2 : 10 = 1:5

What is the ratio of ◆ to ▲ ? = 40 : 45 = 8 : 9

What is the ratio of ▲ to (◆ + ▲) ? = 45 : 85 = 9 : 17

What is the ratio of ✚ to ● ? = 45 : 20 = 9 : 4

What is the ratio of ● to (✚ + ●) ? = 20 : 65 = 4 : 13

Equivalent Ratios

How do you find equivalent fractions? multiply or divide each term by the same #

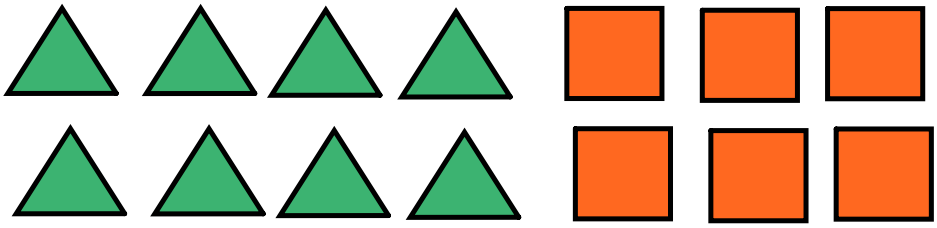
Similar for Ratios

What is the ratio of triangles to squares?

Triangles to squares

4 to 3 for every 4 triangles there is 3 squares

Picture 2



Triangles to squares

8 to 6

x2

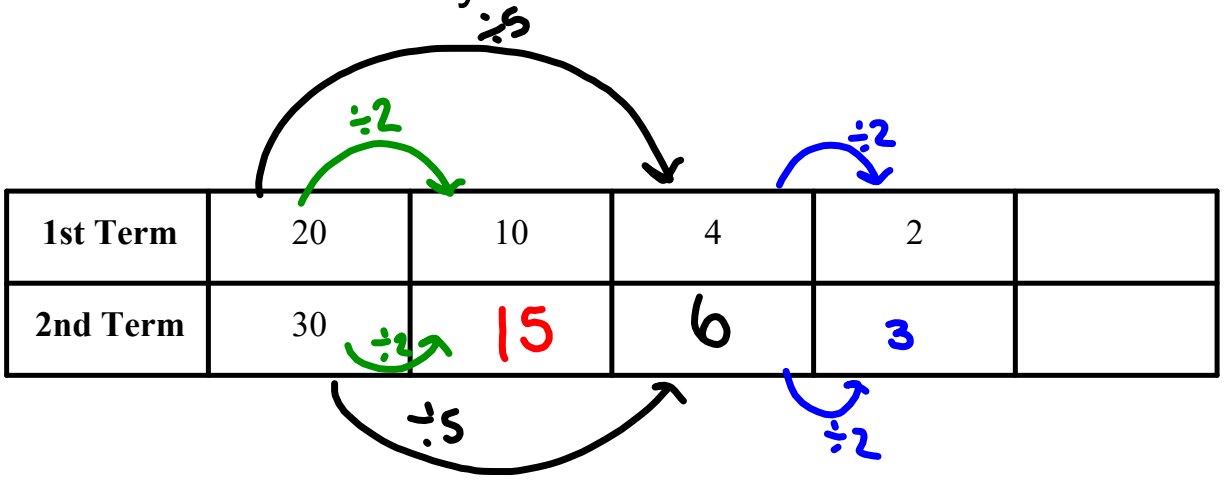
4 to 3 = 8 to 6. These are called equivalent ratios. Equivalent ratios are equal.

x2

Study

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

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



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.

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

21:14

÷7 ÷7

3 : 2

Start with the smalles # in the term.

14 ← in your head

1 x 14

2 x 7

21

1 x 21

3 x 7

Ex) 36 : 24

÷6 ÷6

6 : 4

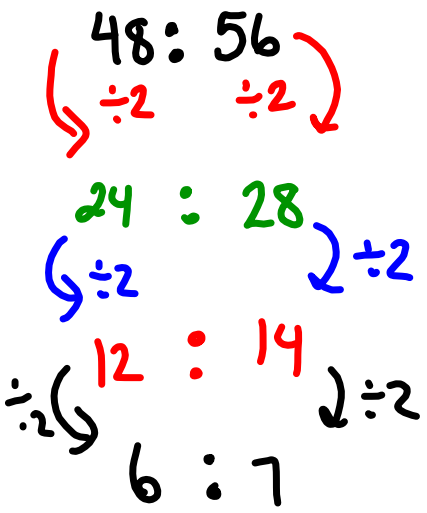
÷2 ÷2

3 : 2

36 : 24

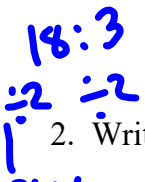
÷12 ÷12

3 : 2

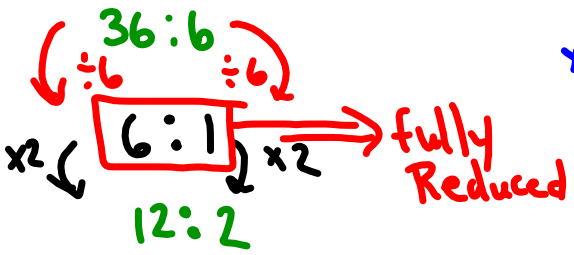

48 : 56
÷2
÷2
24 : 28
÷2
÷2
12 : 14
÷2
÷2
6 : 7

Examples

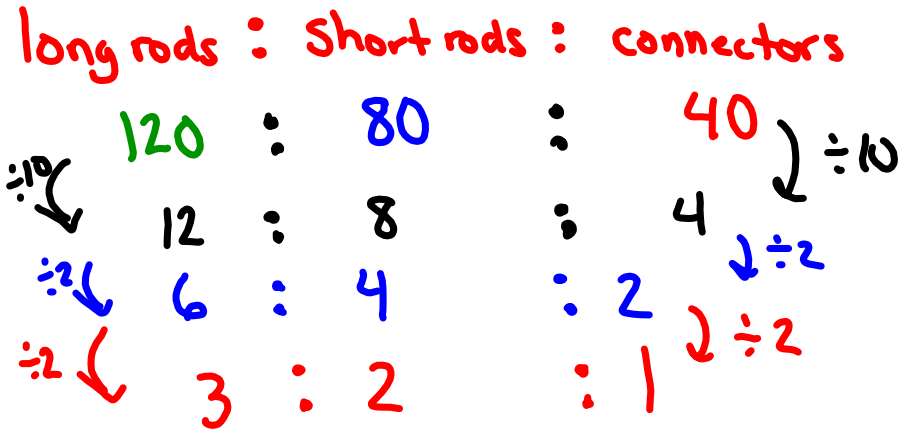
1. Write 3 ratios equivalent to 2:5.



2. Write 3 ratios equivalent to 36: 6.



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.



Homework pg. 273 # 1,2,4-14 (you do not need tables of 5-7)

Examples

1. Write 3 ratios equivalent to 2:5.

4:10 , 20:50, 8:20

2. Write 3 ratios equivalent to 36: 6.

6:1 , 12:2 , 18:3

360:60 24:4 72:12

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.

6:4:2
12:8:4
1200:800:400

long : short : connectors
120 : 80 : 40

12 : 8 : 4
6 : 4 : 2
60 : 40 : 20

Class/Homework

Page 182-183

#1,2,3,

a) 3 : 1 (×2 → 6 : 2, ×3 → 9 : 3)

b)

2) Want 20 as 1 of your terms

2a) 4 : 5 (×4 → 16 : 20)

OR

4 : 5 (×5 → 20 : 25)

3a) 7 : 14 (÷7 → 1 : 2) and 1 : 2

Yes

Practice

1. Write 2 equivalent ratios for each ratio.

a) 3:1 b) 4:2 c) 1:2 d) 5:6 e) 3:5

f) 4:9 g) 7:8 h) 8:3 i) 1:1 j) 2:5

2. Write an equivalent ratio with 20 as one of the terms.

a) 4:5 b) 2:8 c) 7:4 d) 10:3

3. Are the ratios in each pair equivalent? Explain how you know.

a) 7 to 14 and 1 to 2 b) 6:9 and 3:2 c) 1 to 10 and 4 to 40

4. The table shows the number of beads used to make a necklace.
Ginger wants to make a smaller necklace using the same ratio of pink to white beads.
How many different necklaces could Ginger make?
How do you know?

Colour	Number
Pink	30
White	35

5. In a card game, each player is dealt 5 cards.
Make a table to show the total number of cards dealt for each number of players from 3 to 6.
Write each ratio of players to cards dealt.

Number of Players	Total Number of Cards Dealt

6. Ms. Olivieri's class plays a game in teams.
Each team has the same number of students.
The ratio of teams to players is 8 : 32.
   a) How many students are in Ms. Olivieri's class?
   b) How many students are on each team?

7. Atiba plays for the Linden Woods Vipers in the Winnipeg Youth Soccer League.
The ratio of players to soccer balls at practice sessions is 5 : 2.
How many soccer balls are needed for 20 players?

8. The word "fun" has a vowel-to-consonant ratio of 1 : 2.
   a) Find 3 words with a vowel-to-consonant ratio of 2 : 3.
   b) Choose a vowel-to-consonant ratio and find 3 words for it.

9. Su Mei's recipe for bean salad calls for 3 cans of lima beans, 2 cans of pinto beans, and 1 can of kidney beans.
Su Mei is making bean salad for her family reunion.
Suppose she uses 9 cans of lima beans.
   a) How many cans of pinto beans will she use?
   b) How many cans of kidney beans will she use?

10. Katherine has diabetes.
At each meal, she must estimate the mass in grams of carbohydrates she plans to eat, then inject the appropriate amount of insulin.
Katherine needs 1 unit of insulin for 15 g of carbohydrates.
Katherine's lunch has 60 g of carbohydrates.
How many units of insulin should Katherine inject?

11. To make a jug of plant fertilizer, Malaika uses 6 cups of water and 3 scoops of fertilizer.
Bart uses 8 cups of water and 5 scoops of fertilizer.
Will Malaika's and Bart's plant fertilizer have the same strength?
Explain.

12. Use counters to find all the ratios that are equivalent to 2 : 3 and have a second term that is less than 40. List the ratios.