

Weeks of May 18th and May 25th

Mr. Gillies

Returning to Ratio and Proportions.

Ratio-the quantitative relation between two amounts showing the number of times one value contains or is contained within the other. (1:1 or a one to one ratio means for every 1 dog there is 1 cat. You could also have a 2:1 or two to one ratio or really any number of ratios just make sure you read the whole question and make sure you answer each part.)

Proportion-the quantitative relation between two amounts showing the number of times one value contains or is contained within the other. When making cookies kool-aide or any kind of recipe you need to be sure you follow the correct proportions to make sure that they recipe comes out correctly.

Ratios Example

XX XX XX XX
 0 0 0 0

HOW MANY X'S	HOW MANY O'S	RATIO
8	4	2:1 OR TWO TO 1
HOW MANY O'S	HOW MANY X'S	RATIO
4	8	1:2 OR ONE TO TWO

XXXX XXXX
 00 00

HOW MANY X'S	HOW MANY O'S	RATIO
HOW MANY O'S	HOW MANY X'S	RATIO

XXXXX XXXXX XXXXX
 00 00 00

HOW MANY X'S	HOW MANY O'S	RATIO
HOW MANY O'S	HOW MANY X'S	RATIO

XXXXXXXXXX
 OOOOO

HOW MANY X'S	HOW MANY O'S	RATIO
HOW MANY O'S	HOW MANY X'S	RATIO

Create your own visual examples!

I will give you a ratio on the left hand side and you need to draw pictures or put in letters to create the correct ratio I will do the first one for you! 5:1 ratio, the left side of the ratio is 5 that will be represented by X and the right side of 5:1 is 1 that will be represented by 0.

Number	Ratio	Left side	Right side
1	5:1	XXXXX	0
2	7:3		
3	2:3		
4	1:3		
5	2:5		
6	7:13		
7	3:1		
8	1:10		
9	8:13		
10	4:1		

Ratio Word Problems

Use the numbers in the word problems to find the ratios, make sure you answer the question! I'll solve the first one for you.

#	Question	answer
1	A math club has 25 members, of which 11 are males and the rest are females. What is the ratio of males to all club members?	25-11=14 (25 total members minus the number of males will give you the number of females. So there are 11 males to 14 females but it is asking you about males to all members so the answer is 11:25)
2	A group of preschoolers has 8 boys and 24 girls. What is the ratio of girls to all children?	
3	A group of preschoolers has 15 boys and 12 girls. What is the ratio of girls to boys?	
4	A pattern has 4 blue triangles to every 12 yellow triangles. What is the ratio of blue triangles to all triangles?	
5	A gardening club has 21 members, of which 13 are males and the rest are females. What is the ratio of females to all club members?	
6	Dylan drew 1 heart, 1 star, and 26 circles. What is the ratio of circles to hearts?	

Ratio Word Problems PART 2

Use the numbers in the word problems to find the ratios, make sure you answer the question! I'll solve the first one for you.

#	Question	answer
1	A herd of 52 horses has 12 white and some black horses. What is the ratio of white to black horses?	12 to 40
2	A pattern has 5 blue triangles to every 80 yellow triangles. What is the ratio of blue triangles to all triangles?	
3	Noah drew 22 hearts and 76 circles. What is the ratio of circles to all shapes?	
4	A pattern has 14 blue triangles to every 18 yellow triangles. What is the ratio of yellow triangles to blue triangles?	
5	A pattern has 6 blue triangles to every 42 yellow triangles. What is the ratio of yellow triangles to blue triangles?	
6	A group of preschoolers has 63 boys and 27 girls. What is the ratio of boys to all children?	

Proportions are used in everyday life, one of my favorite pastimes is cooking, proportions pop up everywhere when you follow a recipe I will show you a recipe and I will double it so you can see how to make changes to recipes when you make more. We will start with chocolate chip cookies.

Item	Amount	Double amount (multiply by 2)	Final amount after doubling
Butter	1 cup	$2 \times 1 = 2$	2 cups
Sugar	1 cup	$2 \times 1 = 2$	2 cups
Brown Sugar	1 cup	$2 \times 1 = 2$	2 cups
Eggs	2	$2 \times 2 = 4$	4
Vanilla extract	2 teaspoon	$2 \times 2 = 4$	4 teaspoons
Baking soda	1 teaspoon	$2 \times 1 = 2$	2 teaspoons
Water	2 teaspoon	$2 \times 2 = 4$	4 teaspoons
Salt	$\frac{1}{2}$ teaspoon	$\frac{1}{2} \times 2 = 1$	1 teaspoon
Flour	3 cups	$3 \times 2 = 6$	6 cups
Chocolate chips	2 cups	$2 \times 2 = 4$	4 cups

Now try this one on your own oatmeal cookie

Item	Amount	Double amount (multiply by 2)	Final amount
Butter	1 cup		
Sugar	1 cup		
Brown sugar	1 cup		
Eggs	2		
Flour	2 cups		
vanilla	1 teaspoon		
Baking soda	1 teaspoon		
Salt	1 teaspoon		
cinnamon	1 teaspoon		
Quick oats	3 cups		

Now try this one on your own oatmeal cookie

Item	Amount	Triple amount (multiply by 3)	Final amount
Butter	1 cup		
Sugar	1 cup		
Brown sugar	1 cup		
Eggs	2		
Flour	2 cups		
vanilla	1 teaspoon		
Baking soda	1 teaspoon		
Salt	1 teaspoon		
cinnamon	1 teaspoon		
Quick oats	3 cups		

Solving proportions not in a chart.

$$\frac{3}{6} = \frac{9}{x}$$

3 over 6 is equal to 9 over x, it is asking you to find the variable x, 3 is equal to 9, so 3 times 3 =9 therefore you need to multiply 6 times 3 to equal 18 so x equals 18.

Now solve your own.

$$\frac{2}{3} = \frac{6}{x}$$

$$3 \quad x$$

$$4 = 10$$

$$x \quad 40$$

$$x = 10$$

$$8 \quad 20$$

$$\frac{1}{7} = \frac{x}{21}$$

$$7 \quad 21$$

$$\frac{3}{5} = \frac{15}{x}$$

$$5 \quad x$$

$$\frac{9}{3} = \frac{x}{1}$$

$$3 \quad 1$$

RATIO AND PROPORTIONS

Number	Questions	Answers
1	A jar pinto beans and black beans in a ratio of 1 : 1, and 300 of the beans are pinto beans. How many beans in total are there in the jar?	
2	Jayden and Caden share a reward of \$140 in a ratio of 2 : 5. What fraction of the total reward does Jayden get?	
3	Gavin has nickels, dimes, and quarters in the ratio of 8 : 1 : 2. If 30 of Gavin's coins are quarters, how many nickels and dimes does Gavin have?	
4	The ratio of girls to boys in a swimming club was 2 : 4. There were 14 girls. How many total members were there in the club?	
5	A jar contains 550 beans. Of all the beans, $\frac{2}{5}$ are white beans and the rest are navy beans. What is the ratio of white beans to navy beans?	
6	Sophia and Isabella share a reward of \$117 in a ratio of 1 : 8. What fraction of the total reward does Sophia get?	

RATIO AND PROPORTIONS PART 2

Number	Questions	Answers
1	. A truck is carrying pear juice, cherry juice, and apple juice bottles in a ratio of 3 : 1 : 3. If there are 16 cherry juice bottles, then how many juice bottles in total are there?	
2	The ratio of girls to boys in a chess club was 5 : 4. There were 32 boys. How many girls were there in the club?	
3	Jayden and Isabella share a reward of \$40 in a ratio of 2 : 3. How much does Jayden get?	
4	. A truck is carrying grape juice, passion fruit juice, and pear juice bottles in a ratio of 2 : 1 : 2. If there are 20 grape juice bottles, then how many passion fruit juice bottles are there?	

JUST FOR FUN WORD PROBLEMS

Number	Question	Answer
1	I am tall when I am young and short when I am old, what am I?	
2	Where can you find cities, towns, shops and streets but no people?	
3	What question can you never say yes to?	
4	What 5 letter word becomes shorter when you add 2 letters to it?	
5	There is a rooster on top of a barn, if it lays an egg on the top which way will the egg roll off the roof?	
6	What word is so fragile that if you say it you break it?	
7	What has a face and 2 hands but no legs?	