

# Mathematics

## WARM-UPS

Grade 6



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# Standards Correlations

*Mathematics Warm-Ups for Common Core State Standards, Grade 6* is correlated to five domains of CCSS Grade 6 mathematics. The page numbers, titles, and standard numbers are included in the table that follows. The full text of the CCSS mathematics standards for Grade 6 can be found in the Common Core State Standards PDF at <http://www.walch.com/CCSS/00001>.

Page number	Title	CCSS addressed
<b>Ratios and Proportional Relationships</b>		
1	Jumping Jellies!	6.RP.1
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3	Money, Money, Money	6.RP.3a
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5	Paolo's Pizza Pricing	6.RP.3b
6	Stamping Around	6.RP.3b
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8	Let It Snow	6.RP.3b
9	Square Pizza	6.RP.3c
10	Playing with Proportions	6.RP.3c
11	How Sweet It Is	6.RP.3d
12	Oil and Vinegar	6.RP.3d
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14	Ribbon and Bows	6.NS.1
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16	Super Sub Sandwich	6.NS.1
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(continued)

NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.1

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#### Jumping Jellies!

Use the information from the scenario below to answer the questions.

Annie has a big bowl of jelly beans. She has the following number of each flavor:

25 strawberry

25 lemon

50 pineapple

25 blueberry

75 lime

1. How many strawberry jelly beans are there?
2. How many blueberry jelly beans are there?
3. How does the number of strawberry jelly beans compare to the number of blueberry jelly beans?
4. How many pineapple jelly beans are there?
5. How many jelly beans are there altogether?
6. How does the number of pineapple jelly beans compare to the total number of jelly beans?  
What fraction of the jelly beans are pineapple?

NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.2

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### Solving Proportions

Remember that a proportion is two equal ratios.

$$\frac{a}{b} = \frac{c}{d}$$

To solve a proportion, cross-multiply.

$$\frac{a}{b} = \frac{c}{d}$$

$$ad = bc$$

Solve the following proportions for  $x$ .

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

2.  $\frac{1}{2} = \frac{x}{5}$

3.  $\frac{3}{4} = \frac{8}{x}$

4.  $\frac{x-3}{4} = \frac{x}{8}$

NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.3a

#### Money, Money, Money

You got a great job babysitting for \$8 an hour. Fill out the table below to figure out how much you would make if you worked a full 8-hour day.

Number of hours	Amount earned
1	\$8
2	
3	\$24
	\$32
5	
6	
	\$56
8	

NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.3b

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#### Birthday Roses

Read the scenario and answer the question that follows.

Alonzo is planning to purchase roses for his mother on her birthday. He has seen them advertised at 12 roses for \$15.00 and 20 roses for \$23.00.

Which is the better buy? Show your work and explain your reasoning.

NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.3b

#### Paolo's Pizza Pricing

Paolo has just started working at his Uncle Antonio's pizza parlor. He is trying to figure out which size meat lover's pizza provides the best value.

#### Meat Lover's Special

Size	Price
9-inch round pizza	\$10.50
12-inch round pizza	\$15.00
18-inch round pizza	\$19.00

Which pizza listed on the menu provides the best value? Write a few sentences that explain your reasoning.

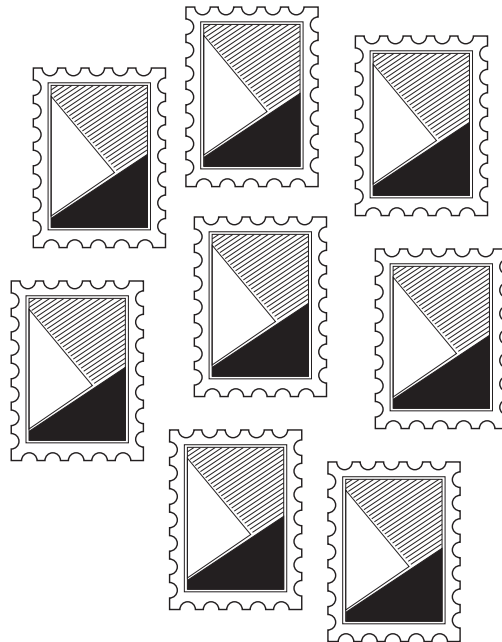
NAME: \_\_\_\_\_

## RATIOS AND PROPORTIONAL RELATIONSHIPS

### CCSS 6.RP.3b

#### Stamping Around

In 2012, a book of 20 first class stamps cost \$9. How much would one stamp cost? Show your work and write your answer below.



# Answer Key

## Ratios and Proportional Relationships

### Jumping Jellies!, p. 1

- 25
- 25
- There are the same number of each.
- 50
- 200
- There are 50 pineapple jelly beans and 200 total.  $\frac{1}{4}$  of the jelly beans are pineapple.

### Solving Proportions, p. 2

- 2
- 2.5
- $10\frac{2}{3}$
- 6

### Money, Money, Money, p. 3

Number of hours	Amount earned
1	\$8
2	\$16
3	\$24
4	\$32
5	\$40
6	\$48
7	\$56
8	\$64

### Birthday Roses, p. 4

Students could scale to 60 roses, which yields \$75 and \$69 respectively, or find the price per rose, which yields \$1.25 and \$1.15 respectively. Thus, 20 roses for \$23.00 is the better buy per rose.

### Paolo's Pizza Pricing, p. 5

The 18-inch pizza provides the best value. 9-inch pizza:  $63.6$  square inches/ $10.5 = 6.06$  square inches per \$1.00; 12-inch pizza:  $113.1$  square inches/ $15 = 7.54$  square inches per \$1.00; 18-inch pizza:  $254.5$  square inches/ $19 = 13.39$  square inches per \$1.00

### Stamping Around, p. 6

Divide \$9 by 20 to get \$0.45. In 2012, one stamp cost \$0.45.

### Faster Than a Speeding Bullet, p. 7

Distance equals rate times time, so  $240 = 4r$ . In this example,  $r = 60$ , so Anna's mother drove 60 mph.

### Let It Snow, p. 8

$275 \div 25 = 10$ ; therefore, Estaban has shoveled 10 walkways.

### Square Pizza, p. 9

There will be no remainder. The friends predict that they will eat 110% of the pizza ( $10\% + 50\% + 35\% + 15\% = 110\%$ ), so there won't be enough.

### Playing with Proportions, p. 10

$\frac{16}{20}$  simplifies to  $\frac{4}{5}$ .  $80\% = \frac{80}{100}$ , which also simplifies to  $\frac{4}{5}$ . Therefore, both fractions are equivalent, and  $\frac{16}{20}$  is 80%.

### How Sweet It Is, p. 11

To compare numbers given in various forms, it is often easiest to put them into the same form. In this example, rewriting all of the numbers in decimal form is most efficient.  $30\% = 0.3$ ,  $23\% = 0.23$ ,  $\frac{1}{5} = 0.2$ , and  $\frac{2}{9} = 0.\bar{2}$ . Therefore, the numbers in order from least to greatest are 0.18,  $\frac{1}{5}$ ,  $\frac{2}{9}$ , 23%, 0.25, and 30%.

### Oil and Vinegar, p. 12

You can set up and solve a proportion:  $\frac{3}{2} = \frac{12}{x}$ .  $3x = 24$ , and  $x = 8$ . You will need 8 tablespoons of vinegar. You can also encourage students to come up with the denominator of a fraction that is equivalent to  $\frac{3}{2}$  which has 12 in the numerator.

### Find the Distance, p. 13

Since there are 3 feet in a yard, divide 15 by 3 to get 5. Or, you could set up and solve a proportion:  $\frac{3 \text{ feet}}{1 \text{ yard}} = \frac{15 \text{ feet}}{x \text{ yards}} = 3x$  and then  $x = 5$ . Students may also use repeated addition or may share another method. Support all ways.

## The Number System

### Ribbon and Bows, p. 14

Veronica can make 9 bows, with  $\frac{1}{3}$  yard remaining.

### Baking Blueberry Pies, p. 15

45 pies (or 44, depending on rounding)

### Super Sub Sandwich, p. 16

- 25 students would get a portion with  $\frac{1}{4}$  remaining.
- 17 students would get a portion.
- Students should use drawings of the sub divided into appropriate length portions.

### Fun with Fractions, p. 17

10; student drawings will vary.

### Using $10 \times 10$ Grids, p. 18

$0.3 \times 0.4 = 0.12$ ;  $\frac{3}{10} \times \frac{4}{10} = \frac{12}{100}$ ; 30% of 40% is 12%

### What Day of the Week?, p. 19

Anatole was born on a Saturday.  $\frac{759}{7} = 108\text{ R}3$

### Greatest Common Factor, p. 20

The GCF is 12. Find the prime factorization of each number and compare. Then take the product of the common factors.