Mathematics

WARM-UPS

Grade 7

WALCH EDUCATION®

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Standards Correlations

Mathematics Warm-Ups for Common Core State Standards, Grade 7 is correlated to five domains of CCSS Grade 7 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 7 can be found in the Common Core State Standards PDF at http://www.walch.com/CCSS/00001.

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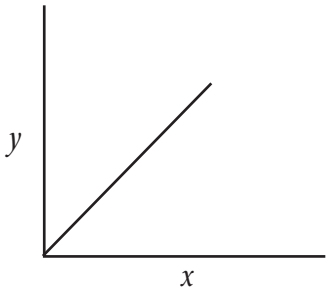
(*continued*)

RATIOS AND PROPORTIONAL RELATIONSHIPS

CCSS 7.RP.2a

Check It Out

The graph below illustrates the distance a car traveled at 25 miles per hour. Examine the graph closely and describe how it looks to a partner.



What information lies on the *x*-axis?

What information lies on the *y*-axis?

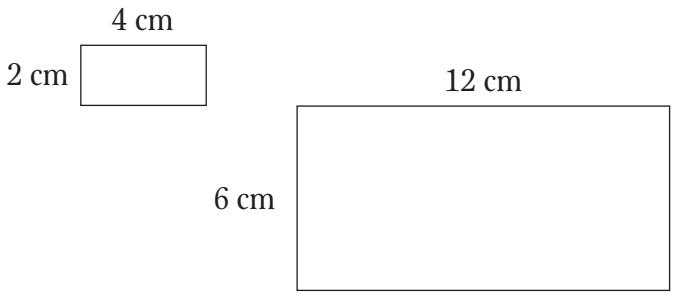
Does it make sense that the graph looks as it does? Explain. Write your observations below.

RATIOS AND PROPORTIONAL RELATIONSHIPS

CCSS 7.RP.2b

Comparing Rectangles

Examine the two rectangles below. Notice that the larger rectangle's length and width are three times the smaller rectangle's length and width.



Answer the following questions.

1. What is the area of the smaller rectangle?

2. What is the area of the larger rectangle?

3. How many times larger is the area of the larger rectangle than the smaller rectangle? Is this what you expected? Explain.

RATIOS AND PROPORTIONAL RELATIONSHIPS

CCSS 7.RP.2b

Input and Output

Consider the tables below. Figure out the rule that takes the input value and gives the corresponding output value. Describe each rule in words.

Example:

Input	1	2	3	4	5
Output	4	5	6	7	8

Rule: Add 3 to the input to get the output.

1.

Input	5	7	9	11	13
Output	10	14	18	22	26

2.

Input	10	20	30	40	50
Output	6	16	26	36	46

3.

Input	24	28	32	36	40
Output	12	14	16	18	20

4.

Input	0	2	4	6	8
Output	3	7	11	14	19

Pizza Pizza Pizza

At Suki's Pizza Parlor, each slice of pizza costs $1.50. Aaron had been studying adding decimal numbers in math class, and so while waiting for his pizza, he made the chart below.

Number of slices	Price
1	$1.50
2	$3.00
3	$4.50
4	$6.00
5	$7.50

Use Aaron's chart to answer the following questions.

1. How would you describe how the numbers in the first column change?

2. How would you describe how the numbers in the second column change?

RATIOS AND PROPORTIONAL RELATIONSHIPS

CCSS 7.RP.2b

Tree Height

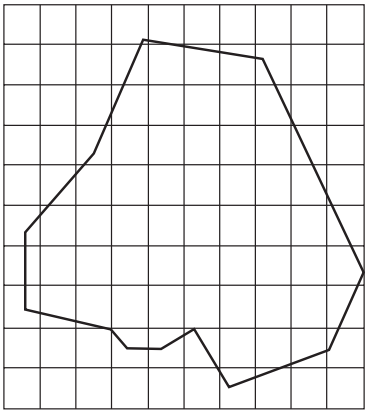
Use what you know about proportional relationships to answer the questions that follow. Show your work for each problem.

1. Justine, who is 60 inches tall, casts an 8-foot shadow. At the same time and place, how long a shadow would a 35-foot tree cast?

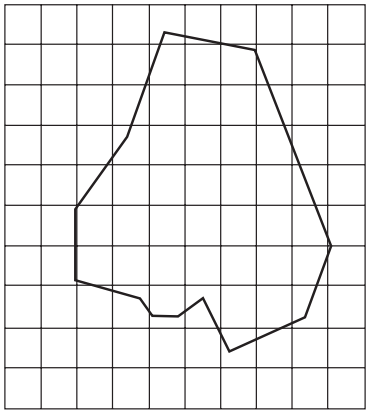
2. If another tree nearby casts a 40-foot shadow, how tall is this tree?

Vanishing Wetlands

Bonita works for the Desoto Park Service. The Little Otter Wetland Area that she monitors has had drought conditions recently. She is preparing a report on the drought for the park service. The grid below represents a model for the change in area of the wetland. What was the percent change in wetland area from August 2010 to August 2011? Explain your thinking.



August 2010 model



August 2011 model

Answer Key

Ratios and Proportional Relationships

Balancing a Milk Bottle, p. 1

3.44 miles per hour

Check It Out, p. 2

Answers will vary. The graph is a straight line at an angle. The information on the *x*-axis could be the time the car has traveled. The information on the *y*-axis could be the distance covered. However, the information could be reversed on either axis. Students may say that the graph makes sense because the car is moving at a constant rate.

Comparing Rectangles, p. 3

1. 8 cm^2
2. 72 cm^2
3. 9 times larger (this is found by finding the ratio of the two areas [72/8]). Students may say that they expected the area to be three times larger (since the length and width are three times larger). Encourage them to realize that since *both* the length and the width are three times larger (and they are multiplying these larger numbers), the area will end up being 3 • 3 or 9 times larger.

Input and Output, p. 4

1. Multiply the input by 2 to get the output.
2. Subtract 4 from the input to get the output.
3. Divide the input by 2 to get the output.
4. Multiply the input by 2 and then add 3 to get the output.

Pizza Pizza Pizza, p. 5

1. The numbers increase by 1.
2. The numbers increase by 1.50.

Tree Height, p. 6

1. The tree's shadow is 56 feet long.
2. The tree is 25 feet tall.

Vanishing Wetlands, p. 7

The original area on the grid is approximately 52 square units. The new area is approximately 34 square units. This represents a 34.6% decrease in area.

Percent Increase or Decrease, p. 8

1. growth; ratio = 3; 300% increase
2. growth; ratio = 1.1; 110% increase
3. decay; ratio = .6; 60% decrease
4. decay; ratio = .2; 20% decrease
5. decay; ratio = .38; 38% decrease

Bread Prices, p. 9

1. 32%
2. $1.37/loaf
3. The 2010 price is 32% greater. If the trend were continuing, one might assume that the percent increase would be closer to 16%.

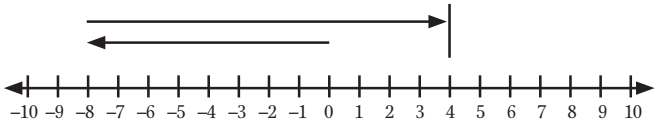
The Number System

Chip-Board Integers I, p. 10

Chip board 1 should have 6 black chips. Chip board 2 could show the 6 black chips with 6 "zeros" included. Chip board 3 would show 6 white chips remain after 12 black chips are removed. So, (–6) – (–12) = +6.

Working with Integers I, p. 11

1.



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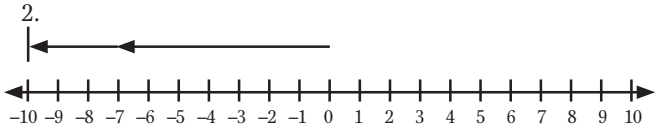
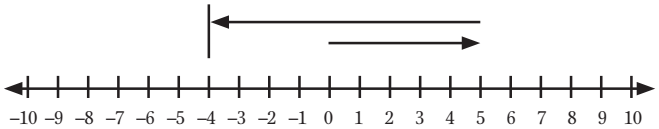


3.



Working with Integers II, p. 12

1. (–9) + 7 = (–2)
2. (–4) + (–6) = (–10)
3. 7 + (–14) = –7

Chip-Board Integers II, p. 13

1. 5 + (–8) = (–3)
2. (–6) + 10 = 4
3. (–8) + 3 = (–5)

Chip-Board Integers III, p. 14

1. Chip board 1: 5 black chips; Chip board 2: 5 black chips and 9 white chips; Chip board 3: 4 white chips
2. Chip board 1: 12 white chips; Chip board 2: 12 white chips and 7 black chips; Chip board 3: 5 white chips
3. Chip board 1: 8 black chips; Chip board 2: 5 black chips crossed out or removed; Chip board 3 (or 2): 3 black chips