

Grade 6

6.RP (Ratios and Proportional Relationships)

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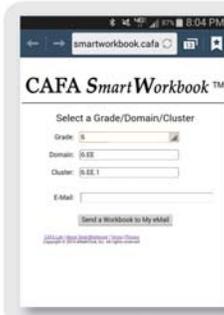
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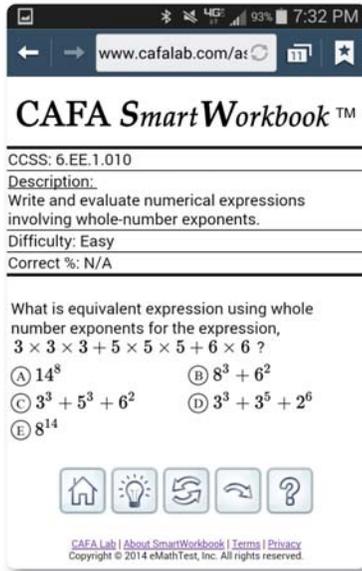
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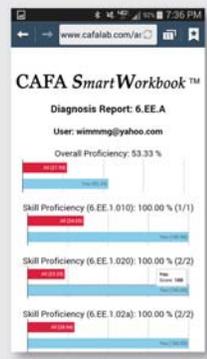
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CCSS Skill Practice : 6.RP.A.1

Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. For example, "The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak." "For every vote candidate A received, candidate C received nearly three votes."

Name: _____

Date: _____

1. For every 56 minutes Tom studied, he took a rest for 13 minutes. What is the ratio of minutes of studying to minutes of resting?



- (A) 56 : 1 (B) 56 : 13
(C) 13 : 56 (D) 69 : 13
(E) 1 : 13

2. Kristy counted the numbers of candies and chocolates after trick or treating. There were 320 candies and 200 chocolates. What is the ratio of the number of candies and the number of chocolates?



- (A) 1 : 40 (B) 9 : 6
(C) 8 : 5 (D) 5 : 8
(E) 6 : 9

3. 30 students like vanilla ice cream and 20 students like chocolate ice cream. What is the ratio of the number of students who like chocolate to the number of students who like vanilla?



- (A) 5 : 3 (B) 2 : 5
(C) 3 : 5 (D) 3 : 2
(E) 2 : 3

4. In 6th grade at one middle school, there are 72 boys and 64 girls. What is the ratio of the number of boys to the number of students?



- (A) 9 : 17 (B) 17 : 9
(C) 8 : 17 (D) 9 : 8
(E) 8 : 9

CCSS Skill Practice : 6.RP.A.2

Understand the concept of a unit rate a/b associated with a ratio a/b with $b \neq 0$, and use rate language in the context of a ratio relationship. For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is $3/4$ cup of flour for each cup of sugar." "We paid 75 for 15 hamburgers, which is a rate of 5 per hamburger."

Name: _____

Date: _____

1. Megan's parents spent \$20 for 5 goody bags for her birthday party. How much did they spend for each goody bag?



- (A) \$8 (B) \$6 (C) \$10
(D) \$5 (E) \$4

2. Emily is baking cookies. The recipe has a ratio of 5 cups of flour to 4 cups of sugar. What is the unit rate of flour for each cup of sugar?



- (A) $\frac{5}{4}$ (B) $\frac{5}{9}$ (C) $\frac{4}{9}$
(D) $\frac{4}{5}$ (E) 1

3. The unit rate of a cup of sugar for a cup of flour is $\frac{7}{8}$. If 24 cups of flour are needed to bake cookies, how many cups of sugar are needed?



- (A) 56 (B) 21 (C) 20
(D) 168 (E) 3

4. The unit price for a pizza is \$13. If Philip paid \$91, how many pizzas did he buy?



- (A) 6 (B) 8 (C) 14
(D) 7 (E) 15

CCSS Skill Practice : 6.RP.A.3

Use ratio and rate reasoning to solve real-world and mathematical problems, e.g., by reasoning about tables of equivalent ratios, tape diagrams, double number line diagrams, or equations.

Name: _____

Date: _____

1. Kristy ate cookies for snack, and found that there were 4 grams of sugar for every 80 grams. If she ate the whole bag which weights 240 grams, how man grams of sugar did she eat?



- (A) 11 (B) 12 (C) 16
(D) 14 (E) 13

2. Ethan drove 60 mph to go home from his college. The distance between his college and his house is 300 miles. After he had been driving for 3.5 hours, how far is he to his destination? Answers in miles.



- (A) 85 (B) 210 (C) 100
(D) 90 (E) 205

3. At Jenny's school, there were 500 students last year. If there are 20% fewer students this year, how many students are at her school this year?



- (A) 520 (B) 390 (C) 600
(D) 480 (E) 400

4. What is the value of $5 \times (s + t)$ when $s + t = 289$?



- (A) 1445 (B) 1435 (C) 294
(D) 1425 (E) 1455

CCSS Skill Practice : 6.RP.A.3.a

Make tables of equivalent ratios relating quantities with whole number measurements, find missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios.

Name: _____

Date: _____

1. The ratio of two values in each column in the table below is equivalent. What is the value of x ?



5	7	9	10
25	x	45	50

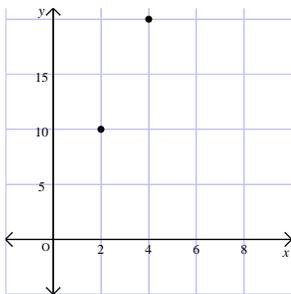
- (A) 30 (B) 40 (C) 5
 (D) 12 (E) 35

2. When baking cookies, the cooks at Jenny's bakery mix 3 lb of sugar and 6 lb of flour. The cooks at Ethan's bakery mix 3 lb of sugar and 21 lb of flour. Also, the cooks at Simon's bakery mix 3 lb of sugar and 9 lb of flour. Whose bakery uses the lowest ratio of sugar to flour?



- (A) Jenny
 (B) Simon
 (C) Ethan
 (D) Can not be determined
 (E) They all used the same ratio

3. What is the ratio of values of x to values of y for the following graph?



- (A) 5 (B) $\frac{1}{20}$ (C) 10
 (D) $\frac{1}{5}$ (E) $\frac{1}{10}$

4. What is the ratio of t to N ?



t	N
3	12
10	40

- (A) $\frac{1}{4}$ (B) $\frac{1}{3}$ (C) 3
 (D) 4 (E) 10

CCSS Skill Practice : 6.RP.A.3.b

Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?

Name: _____

Date: _____

1. The car runs 260 miles in 5 hours. If the driver keeps the same speed, how many miles can he drive in 7 hours?



- (A) 314 (B) 1300 (C) 414
(D) 364 (E) 295

2. Mr. Simon's art class has a female student to male student ratio of 4 : 5. If Mr. Simon's art class has 16 girls, how many students does he have?



- (A) 40 (B) 20 (C) 36
(D) 32 (E) 34

3. A 1 gallon of apple juice costs \$16. What is the price of 1 cup of apple juice?



- (A) \$1.1 (B) \$1.2 (C) \$0.9
(D) \$1.3 (E) \$1

4. If it took 9 hours to mow 8 lawns, then at that rate, how many lawns could be mowed in 45 hours?



- (A) 32 (B) 40 (C) 41
(D) 48 (E) 56

CCSS Skill Practice : 6.RP.A.3.c

Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

Name: _____

Date: _____

1. What is 25% of 26?



- (A) 28.5 (B) 65 (C) 26.25
(D) 0.65 (E) 6.5

2. Kristy was organizing her books. There were 120 nonfiction books out of 240 books. What percent of nonfiction books does she have?



- (A) 55% (B) 50% (C) 60%
(D) 45% (E) 40%

3. At a town meeting, 45% of attendees voted in favor of new law. If the number of attendees is 300, how many people voted against new law?



- (A) 135 (B) 127 (C) 159
(D) 165 (E) 150

4. Kristy went to a restaurant for lunch. The bill for lunch was \$14. If she left 19% tip, what was the total cost for lunch?



- (A) \$14.55 (B) \$17.66 (C) \$14.19
(D) \$17.16 (E) \$16.66

CCSS Skill Practice : 6.RP.A.3.d

Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities.

Name: _____

Date: _____

1. Divide 12 feet and 4 inches by 4. Find the answer in inches.



- (A) 40 (B) 31 (C) 36
(D) 37 (E) 52

2. At a county fair, 1 ounce bag of candies is \$0.84. What is the cost for 3 lb bag of candies? Round to the nearest cent if necessary.



- (A) \$45.36 (B) \$32.76 (C) \$30.24
(D) \$35.28 (E) \$40.32

3. James was walking to a park that is 2 miles away. If he walked 110 yards per minutes, how many minutes would it take him to the park?



- (A) 35 (B) 32 (C) 37
(D) 23 (E) 27

4. A family of 5 went on a trip. They calculated the number of gallon size water bottle to purchase. They estimated 7 cups a day per person and their trip was 4 days long. How many gallon size water bottle did they have to purchase?



- (A) 9 (B) 10 (C) 8
(D) 13 (E) 7



Cluster Comprehensive Exam (6.RP.A)

Name: _____ Date: _____

Scan the QRcode to submit answers

1. At one town meeting, 84 people attended and 56 people voted in favor of new law. What is the ratio of the number of votes against the law to the number of votes in favor of the law?

- (A) 2 : 3 (B) 3 : 2
(C) 1 : 3 (D) 2 : 1
(E) 1 : 2

2. Megan counted her shirts and pants and found that there are 5.5 times as many shirts as pants. If there are 63 more shirts than pants, how many shirts and pants does she have?

- (A) 91 (B) 46 (C) 77
(D) 84 (E) 182

3. Ms. Christine's class has a female student to male student ratio of 2 : 3. If the total number of students in Ms. Christine's class is 20, how many boys does she have?

- (A) 14 (B) 12 (C) 8
(D) 6 (E) 10

4. Emily's height is 4 ft and 11 inches and Dorothy's height is 39 inches. When Emily measured her shadow, it was 76 inches. What would be the length of Dorothy's shadow in inches if Dorothy measured her shadow at the same spot and at the same time? Round the answer to the nearest inches if necessary.

- (A) 58 (B) 40 (C) 50
(D) 42 (E) 36



Domain Comprehensive Exam (6.RP)

Name: _____ Date: _____

Scan the QRcode to submit answers

1. There are 1216 balls in a large bag. Out of these, 304 are red balls, 532 are blue balls, and the rest are yellow balls. What is the ratio of the number of blue balls to the number of yellow balls?

- (A) 1 : 4 (B) 4 : 5
(C) 7 : 16 (D) 4 : 7
(E) 7 : 5

2. Bob's family went to restaurant. They paid \$66 for 11 burgers. What is the unit price of a burger?

- (A) \$4 (B) \$55 (C) \$12
(D) \$6 (E) \$66

3. Christine counted how many shirts and pants she had. The ratio of the number of shirts to the number of pants is 6 : 5. What unit rate is equivalent to this ratio?

- (A) $\frac{6}{5}$ (B) $\frac{5}{6}$ (C) $\frac{5}{11}$
(D) $\frac{11}{6}$ (E) $\frac{6}{11}$

4. Ian found that he grew 3% for one year. If his height was 58 inches last year, what is his height in inches now?

- (A) 63.24 (B) 59.74 (C) 60.24
(D) 61.24 (E) 59.24



Domain Comprehensive Exam (6.RP)

Name: _____ Date: _____

Scan the QRcode to submit answers

5. What is the ratio of the data in the table?

2	5	8	12
4	10	16	24

- (A) 2 : 1 (B) 1 : 3
(C) 1 : 2 (D) 3 : 1
(E) 1 : 4

6. When each column in the table has the same ratio, what is the missing value in the table?

5	15
	27
20	60

- (A) 12 (B) 10 (C) 9
(D) 8 (E) 11

7. The ratio of townhomes to single homes in one city is 7 to 2. If there are 2520 single homes in the city, how many townhomes are there?

- (A) 35280 (B) 360 (C) 1260
(D) 720 (E) 8820

8. In one elementary school, 35% of students are boys. If there are 154 boys, how many students are in the school?

- (A) 475 (B) 405 (C) 594
(D) 286 (E) 440

Answer Keys

CCSS Skill Practice

6.RP.A.1 : 1.B 2.C 3.E 4.A
6.RP.A.2 : 1.E 2.A 3.B 4.D
6.RP.A.3 : 1.B 2.D 3.E 4.A
6.RP.A.3.a : 1.E 2.C 3.D 4.A
6.RP.A.3.b : 1.D 2.C 3.E 4.B
6.RP.A.3.c : 1.E 2.B 3.D 4.E
6.RP.A.3.d : 1.D 2.E 3.B 4.A

Comprehensive Exam

6.RP.A : 1.E 2.A 3.B 4.C
6.RP : 1.E 2.D 3.A 4.B 5.A 6.C 7.E 8.E



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