Contents

Acknowledgments

Continental Press

Answer Key

Unit 1 Ratios and Percents

Lesson 1 *Ratios*   pp. 8–11

1. C [6.RP.1]
2. D [6.RP.1]
3. B [6.RP.1]
4. A [6.RP.1]
5. D [6.RP.1]
6. D [6.RP.1]
7. Constructed response   [6.RP.1]
   $$\frac{5}{2}$$
8. Constructed response   [6.RP.1]
   6 : 6
9. Constructed response   [6.RP.1]
   15 to 5, 15 : 5, $\frac{15}{5}$
10. Extended response   [6.RP.1]
    Part A: 158 to 152
    Part B: They are the same. *Explanations may vary but should say something like the following:* The number of protons is the same as the number of electrons for each element. So the ratio of protons to electrons will be the same.

Lesson 2 *Equivalent Ratios*   pp. 12–15

1. A [6.RP.3.a]
2. B [6.RP.3.a]
3. C [6.RP.3.a]
4. D [6.RP.3.a]
5. C [6.RP.3.a]
6. Constructed response   [6.RP.3.a]
   $$\frac{4}{5}$$
7. Constructed response   [6.RP.3.a]
   $$\frac{2}{11}$$
8. Extended response   [6.RP.3.a]
   Part A: 1 : 0.8
   Part B: 7 : 20. *Explanations may vary but should say something like the following:* I found the equivalent ratio $\frac{1}{0.8}$ used in this table. Then I multiplied 9 by 0.8 to find the value of 9 US dollars in Euros.
9. Extended response   [6.RP.3.a]
   Part A: $\frac{3}{2}$

Part B: No. *Explanations may vary but should say something like the following:* The ratio $\frac{24}{20}$ written in lowest terms is $\frac{24 \div 4}{20 \div 4} = \frac{6}{5}$. This is not the same as $\frac{6}{4}$ written in lowest terms, so these are not equivalent fractions.

Lesson 3 *Rates*   pp. 16–19

1. C [6.RP.2, 6.RP.3.b]
2. A [6.RP.2, 6.RP.3.b]
3. A [6.RP.2, 6.RP.3.b]
4. C [6.RP.2, 6.RP.3.b]
5. B [6.RP.2, 6.RP.3.b]
6. Constructed response   [6.RP.2, 6.RP.3.b]
   60 : 1 and 120 : 2
7. Constructed response   [6.RP.2, 6.RP.3.b]
   15
8. Constructed response   [6.RP.2, 6.RP.3.b]
   Explanations may vary but should say something like the following: It is a unit rate because the beats are compared to one minute. The number 1 is the denominator of the ratio.
9. Constructed response   [6.RP.2, 6.RP.3.b]
   375
10. Extended response   [6.RP.2, 6.RP.3.b]
    Part A: $0.20 per ounce
    Part B: Wheat cereal. *Explanations may vary but should say something like the following:* The unit cost for the wheat cereal is $0.20 per ounce. The unit cost for the oat cereal is $0.25 per ounce. Since $0.20 < $0.25, the wheat cereal is a better buy.
11. Extended response   [6.RP.2, 6.RP.3.b]
    Part A: Friday
    Part B: 1.35 miles. *Explanations may vary but should say something like the following:* The faster rate is 1.5 miles per hour and the distance for Friday is still 0.75 mile. So the distance for Saturday would be 1.5 miles per hour $\times$ 0.4 hour for 0.6 mile. The total distance is 0.75 + 0.6 = 1.35 miles.

Lesson 4 *Measurement Conversions*   pp. 20–23

1. D [6.RP.3.d]
2. C [6.RP.3.d]
3. B [6.RP.3.d]
4. D [6.RP.3.d]
5. A [6.RP.3.d]

Common Core State Standards
for Mathematics, Grade 6

Ratios and Proportional Relationships   6.RP

Understand ratio concepts and use ratio reasoning to solve problems.

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."*

2. Understand the concept of a unit rate *a/b* associated with a ratio *a:b* with *b* ≠ 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."*

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.

   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.

   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?*

   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.

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

The Number System   6.NS

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, e.g., by using visual fraction models and equations to represent the problem. *For example, create a story context for (2/3) ÷ (3/4) and use a visual fraction model to show the quotient; use the relationship between multiplication and division to explain that (2/3) ÷ (3/4) = 8/9 because 3/4 of 8/9 is 2/3. (In general, (a/b) ÷ (c/d) = ad/bc.) How much chocolate will each person get if 3 people share 1/2 lb of chocolate equally? How many 3/4-cup servings are in 2/3 of a cup of yogurt? How wide is a rectangular strip of land with length 3/4 mi and area 1/2 square mi?*

Skill Analysis for Practice Test

MC = Multiple Choice = 1 pt
CR = Constructed Response = up to 2 pt
ER = Extended Response = up to 3 pt

Student Name	Ratios and Proportional Relationships MC: #2, 3, 8, 19, 20 CR: #31, 35, 37, 39, 40, 43 *17 points possible*	Number Sense MC: #1, 4, 6, 7, 10, 12, 15, 16, 30 CR: #32, 34, 36, 41 ER: #51, 52 *23 points possible*	Expressions and Equations MC: #9, 11, 13, 14, 17, 18, 21, 22, 24, 25, 26, 27 CR: #33, 44, 47, 48, 49 ER: #53 *25 points possible*	Geometry MC: #23, 28 CR: #38, 42, 45 *8 points possible*	Statistics and Probability MC: #5, 29 CR: #46, 50 *6 points possible*	TOTAL SCORE *79 points possible*