Ratios

1. The perimeter of rectangle $EFJK$ is 112 cm. The ratio of the side lengths $EF:FJ$ is $3:4$. What is the length, in centimeters, of $\overline{EF}$?
   A. 7
   B. 10
   C. 16
   D. 24
   E. 48

2. The perimeter of rectangle $ABCD$ is 162 cm. The ratio of the side lengths $AB:BC$ is $4:5$. What is the length, in centimeters, of $\overline{BC}$?
   A. 9
   B. 36
   C. 45
   D. 72
   E. 90

3. The perimeter of triangle LMN is 228 cm. The ratio of the side lengths $LM:MN:NL$ is $3:4:5$. What is the length, in centimeters, of $\overline{MN}$?
   A. 12
   B. 57
   C. 76
   D. 95
   E. 133

4. Latrell is baking a cake for his dad's birthday. The original recipe calls for $2\frac{1}{2}$ cups of sugar and $3\frac{1}{2}$ cups of flour. Latrell will use the entire contents of a bag that contains $4\frac{1}{2}$ cups of sugar and will use the same ratio of ingredients called for in the original recipe. How many cups of flour will Latrell use?
   A. 5
   B. $5\frac{3}{8}$
   C. $5\frac{1}{2}$
   D. $6\frac{1}{10}$
   E. $6\frac{3}{10}$

5. A cupcake recipe that yields 12 cupcakes requires $2\frac{1}{2}$ cups of butter. When the ingredients in this recipe are increased proportionately, how many cups of butter are required for the recipe to yield 45 cupcakes?

A. 9

B. $9\frac{1}{4}$

C. $9\frac{3}{8}$

D. 10

E. $10\frac{1}{2}$

6. A poll of the student body of Jefferson High School asked 50 students the same question: should gum chewing be allowed in class? 38 students responded that it should be allowed, and 12 responded that it should not. If the poll accurately predicts the response ratio of the school's 2500 students, how many students in the entire school think that gum chewing should be allowed in class?

A. 600

B. 900

C. 1200

D. 1500

E. 1900

7. The combined length of 3 metal rods is 156 inches. The lengths of the rods are in the ratio $3:4:5$. What is the length, in inches, of the longest rod?

A. 39

B. 52

C. 65

D. 72

E. 80

8. The ratio of the perimeter of two squares is $3:4$. If the area of the larger square is 256 square feet, what is the length, in feet, of the side of the smaller square?

A. 12

B. 18

C. 24

D. 27

E. 36

9. What fraction of a 16-inch diameter cake contains the same volume of cake as 1 slice of a 12-inch diameter cake, of equal height, cut into 9 equal slices?

A. $\frac{1}{16}$

B. $\frac{1}{4}$

C. $\frac{1}{2}$

D. $\frac{3}{4}$

E. $\frac{3}{16}$

10. Jeff, Connor, and Dominic each receive an allowance. The ratio of Joe's allowance to Dominic's allowance is 4:3, and the ratio of Dominic's allowance to Connor's allowance is 2:3. What is the ratio of Jeff's allowance to Connor's allowance?

A. 1:2
B. 1:6
C. 2:5
D. 8:9
E. 5:2

11. The ratio of Alexi's height to Boris' height is 7:8. The ratio of Boris' height to Cameron's height is 5:4. What is the ratio of Alexi's height to Cameron's height?

A. 3:4
B. 7:13
C. 14:22
D. 20:24
E. 35:32

12. The line below contains X, Y, and Z, in that order. The ratio of the length of $\overline{XY}$ to the length of $\overline{YZ}$ is 7:8. If it can be determined, what is the ratio of the length of $\overline{XY}$ to the length of $\overline{XZ}$?

A. 5:14
B. 7:5
C. 7:15
D. 15:7
E. Can't be determined from the given information.

13. The ratio of a to b is 5 to 1, and the ratio of b to c is 9 to 1. What is the value of $\dfrac{2a+4b}{3b+3c}$?

A. $\dfrac{3}{8}$

B. $\dfrac{5}{13}$

C. $\dfrac{18}{19}$

D. $\dfrac{21}{5}$

E. $\dfrac{49}{6}$

14. The degree measures of the interior angles of a certain pentagon are in the ratio of $2:3:4:5:6$. What is the measure of the largest interior angle of this pentagon?

A. 30°
B. 60°
C. 100°
D. 135°
E. 162°

15. A company sells Greek yogurt in 3-quart containers for $2.00 per container. The company also sells Greek yogurt in 2-quart containers for $1.50 per container. What is the ratio of the price per quart for the 2-quart container to the price per quart for the 3-quart container?

A. $\dfrac{8}{9}$

B. $\dfrac{9}{8}$

C. $\dfrac{2}{3}$

D. $\dfrac{3}{4}$

E. $\dfrac{3}{2}$