

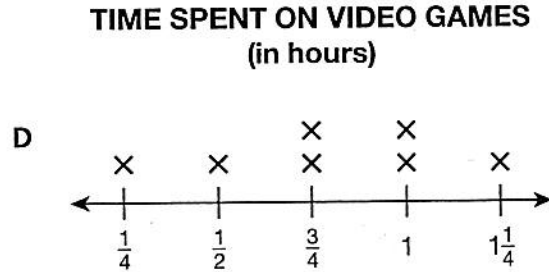
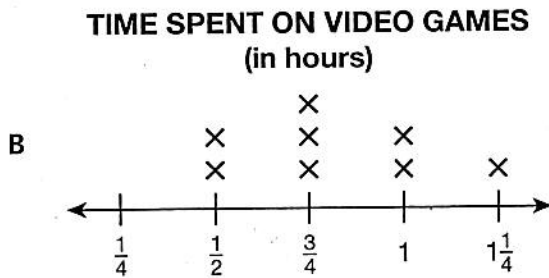
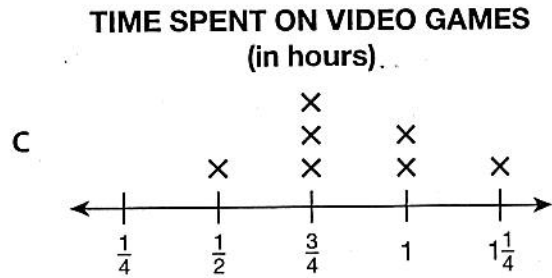
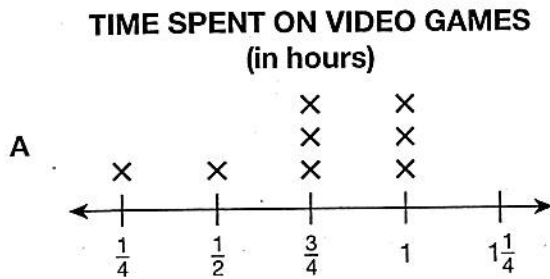
- 1 Rondell is participating in a charity run at Salt Fork State Park. The route he is running is  $\frac{1}{2}$ -mile long. He has decided to break up his route into 5 equal sections. How long is one section of Rondell's route?
- A  $\frac{1}{15}$  mile
- B  $\frac{1}{10}$  mile
- C  $\frac{1}{7}$  mile
- D  $2\frac{1}{2}$  miles
- 2 Which statement correctly compares the value of the underlined 7 in the number 257.6 to the 7 that is **not** underlined?
- A The underlined 7 is 100 times greater than the 7 that is not underlined.
- B The underlined 7 is 10 times greater than the 7 that is not underlined.
- C The underlined 7 is  $\frac{1}{10}$  the value of the 7 that is not underlined.
- D The underlined 7 is  $\frac{1}{100}$  the value of the 7 that is not underlined.

3

Rajan kept track of how much time, in hours, he spent playing video games each day for a week. His data are shown below.

$$\frac{3}{4}, 1, \frac{3}{4}, \frac{1}{2}, 1\frac{1}{4}, 1, \frac{3}{4}$$

Which line plot shows Rajan's data?



4

Which expression shows "28 divided by the product of  $\frac{1}{2}$  and 8" using numbers and symbols?

- A  $28 \div \left(\frac{1}{2} + 8\right)$
- B  $28 \div \left(\frac{1}{2} \times 8\right)$
- C  $28 \div \left(\frac{1}{2} \div 8\right)$
- D  $28 \div \frac{1}{2} \times 8$

5 Which of the following statements is true?

- A The product of  $\frac{5}{6}$  and  $\frac{2}{5}$  is less than  $\frac{2}{5}$ .
- B The product of  $\frac{5}{6}$  and  $\frac{2}{5}$  is greater than  $\frac{2}{5}$ .
- C The product of  $\frac{5}{6}$  and  $\frac{2}{5}$  is equal to  $\frac{2}{5}$ .
- D The product of  $\frac{5}{6}$  and  $\frac{2}{5}$  is greater than 1.

6 Antoine wrote a decimal. The value of the 8 in Antoine's decimal is  $8 \times \frac{1}{1000}$ . Which of the following numbers could be Antoine's decimal?

- A 34.862
- B 34.682
- C 34.628
- D 34.486

7 What is the value of the expression below?

$$24 \times 108$$

- A 248
- B 432
- C 2,462
- D 2,592

**8** In science class, Nichelle has a beaker that contains  $\frac{2}{5}$  liter of salt water. As part of her experiment, she must pour  $\frac{1}{3}$  liter of the salt water into a petri dish. After this step, how much salt water is left in the beaker?

A  $\frac{1}{2}$  liter

B  $\frac{3}{8}$  liter

C  $\frac{2}{15}$  liter

D  $\frac{1}{15}$  liter

**9** Joaquin has a special mountain bike that weighs only 16.25 pounds. Rhonda says her bike weighs 2.5 times as much as Joaquin's bike. How much does Rhonda's bike weigh?

A 40.625 pounds

B 42.625 pounds

C 405.25 pounds

D 406.25 pounds

**10** Diana got a loan of \$6,804 to buy a used car. She has to make 36 equal payments to repay the loan. Let  $n$  = the amount of each payment. Which equation represents how much each payment will be?

A  $\frac{n}{36} = 6,804$

B  $\frac{n}{6,804} = 36$

C  $\frac{6,804}{36} = n$

D  $\frac{36}{6,804} = n$

**Go On**

**11** Zhu lives 570 meters from Terry's house. Terry lives 850 meters from school. How many kilometers will Zhu walk if he walks from his house to Terry's house and then to school?

- A 1.42 kilometers
- B 14.2 kilometers
- C 142 kilometers
- D 1,420,000 kilometers

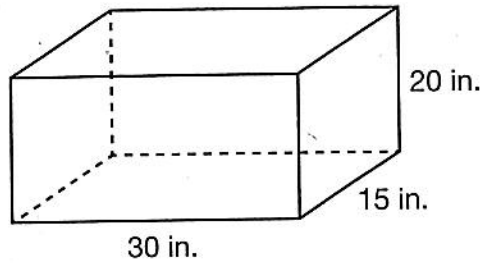
**12** The distance from the Earth to the sun is approximately  $9.3 \times 10^7$  miles. What would be the distance expressed in standard form?

- A 930,000 miles
- B 9,300,000 miles
- C 93,000,000 miles
- D 930,000,000 miles

**13** Leroy's favorite basketball player is 20 inches taller than he is. If his favorite basketball player is 7 feet tall, how tall is Leroy?

- A 1 foot 3 inches tall
- B 5 feet 3 inches tall
- C 5 feet 4 inches tall
- D 6 feet 4 inches tall

- 14 Elena bought a storage box with the dimensions below.



[not drawn to scale]

What is the volume of the storage box?

- A 9,000 cubic inches
  - B 900 cubic inches
  - C 450 cubic inches
  - D 65 cubic inches
- 15 If 14 oranges are split evenly among 6 friends, how many oranges does each friend get?
- A  $1\frac{2}{3}$
  - B  $2\frac{1}{6}$
  - C  $2\frac{1}{3}$
  - D  $3\frac{1}{7}$

- 16 Which context fits the expression  $7 \div \frac{1}{5}$ ?
- A Melanie had  $\frac{1}{5}$  pound of apricots that she divided equally amongst 7 friends. How many pounds of apricots did each friend receive?
  - B Melanie divides her 7 pounds of apricots into batches of  $\frac{1}{5}$  pound each. She wants to give each batch to a friend. How many friends did she give apricots to?
  - C Melanie has 7 pounds of apricots. She wants to put aside  $\frac{1}{5}$  of her apricots to make preserves with. How many pounds of apricots will she use to make preserves?
  - D Melanie gives  $\frac{1}{5}$  pound of apricots to each of her 7 friends. How many pounds of apricots did Melanie have to begin with?
- 17 Reggie earns \$534 a week. His pay stays the same for 2 years. During these 2 years, how much will Reggie be paid in all? Note: 1 year = 52 weeks
- A \$55,536
  - B \$27,768
  - C \$12,816
  - D \$7,476
- 18 A wall in Lakisha's room has an area of  $4\frac{2}{9}$  square yards. She wants to cover  $\frac{3}{4}$  of the wall with wallpaper. How much wallpaper does she need?
- A  $3\frac{1}{6}$  square yards
  - B  $4\frac{1}{6}$  square yards
  - C  $4\frac{5}{13}$  square yards
  - D  $4\frac{35}{36}$  square yards

- 19 Ian used a device called a micrometer screw gauge to measure the width of a thimble, which was 0.276 inch. What is 0.276 rounded to the nearest hundredth?

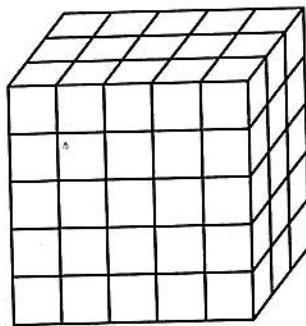
A 0.27  
B 0.28  
C 0.3  
D 0.5

- 20 What is the value of the expression below?

$$\frac{3}{8} + \frac{3}{4}$$

A  $\frac{6}{12}$   
B  $\frac{9}{12}$   
C  $\frac{6}{8}$   
D  $\frac{9}{8}$

- 21 Holden built a rectangular prism below using cubes with a side length of 1 inch each.



[not drawn to scale]

What is the volume of Holden's prism?

A 75 cubic inches  
B 50 cubic inches  
C 25 cubic inches  
D 15 cubic inches

**Go On**



- 22 What is the value of the expression below?

$$\frac{4}{5} \times \frac{2}{3}$$

- A  $\frac{6}{15}$
- B  $\frac{8}{15}$
- C  $\frac{6}{8}$
- D  $\frac{22}{15}$

- 23 What is the value of the expression below?

$$3,187 \div 76$$

- A 41 R71
- B 42
- C 42 R5
- D 419 R26

- 24 Julia is making bread dough. She needs  $5\frac{1}{8}$  cups of flour. So far, she has added  $3\frac{1}{2}$  cups of flour to the bowl. Which is the **best** estimate of how much more flour she needs to add?

- A  $\frac{1}{2}$  cup
- B  $\frac{5}{8}$  cup
- C  $1\frac{1}{2}$  cups
- D  $2\frac{1}{2}$  cups

**STOP**

- 25 What is the value of the expression below?

$$5\frac{5}{6} - 2\frac{2}{3}$$

A  $\frac{1}{6}$

B  $\frac{1}{3}$

C  $3\frac{1}{6}$

D  $3\frac{1}{3}$

- 26 A number has a 2 in the hundredths place. The number also has a digit whose value is  $\frac{1}{10}$  the value of the 2 in the hundredths place. Which could be the word form of the number?

- A one hundred fifty-seven and two hundred twenty thousandths
- B two hundred twenty-three and seven thousandths
- C three hundred forty-six and one hundred twenty-two thousandths
- D seven hundred eighty-five and two hundred twenty-four thousandths

- 27 What is the value of the expression below?

$$(20 - 6) \div 2 + 4(6 + 3)$$

A 34

B 43

C 44

D 69

- 28 A figure is made up of 23 unit cubes. The side length of each unit cube is one centimeter. What is the volume of the figure?

- A 23 centimeters
- B 2.3 square meters
- C 23 square centimeters
- D 23 cubic centimeters

**29** Van spent  $\frac{1}{3}$  hour mowing the lawn in front of his house and then  $\frac{1}{2}$  hour mowing the lawn behind his house. Van calculates he spent  $\frac{2}{5}$  hour mowing both lawns. Which statement about Van's calculation is correct?

- A Van's calculations are incorrect because  $\frac{2}{5}$  is less than  $\frac{1}{2}$ .
- B Van's calculations are correct because  $\frac{1}{3}$  is greater than  $\frac{2}{5}$ .
- C Van's calculations are incorrect because  $\frac{2}{5}$  is greater than  $\frac{1}{2}$ .
- D Van's calculations are correct because  $\frac{1}{2}$  is less than  $\frac{2}{5}$ .

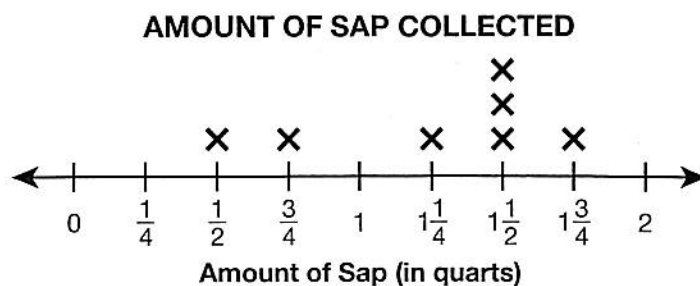
**30** Alyssa makes cloth dolls that she sells at craft fairs. For the dolls' hair, she cuts pieces of yarn that are 14 inches long. There are 9,534 inches of yarn in a ball Alyssa has. How many pieces of dolls' hair can she cut from this ball of yarn?

- A 682
- B 681
- C 68
- D 18

**31** Shanice works at an animal shelter and weighs the dogs that are brought in. The first dog brought in today weighs  $7\frac{1}{2}$  pounds. The second dog's weight is  $\frac{3}{4}$  that of the first dog. What is the weight of the second dog?

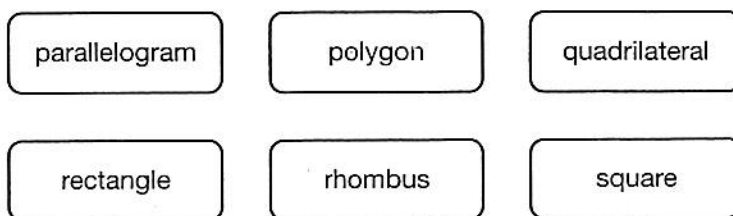
- A  $8\frac{1}{4}$  pounds
- B  $7\frac{3}{8}$  pounds
- C  $6\frac{3}{4}$  pounds
- D  $5\frac{5}{8}$  pounds

- 32 Each spring Mason taps maple trees in his yard to collect sap. His family uses the sap to make maple syrup. The line plot below shows the amount of sap that Mason collected from the trees in his yard each day for one week.



What is the difference of the greatest and least amounts of sap collected from the trees in Mason's yard in a single day?

- A  $2\frac{1}{2}$  quarts  
 B  $1\frac{3}{4}$  quarts  
 C  $1\frac{1}{4}$  quarts  
 D  $\frac{1}{2}$  quart
- 33 Aliyah is playing a math game. She has the cards shown below.



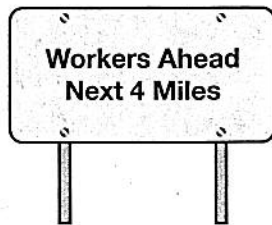
Her partner drew this shape.



Aliyah gets 1 point for each card she has that names the shape. How many points does Aliyah get?

- A Aliyah gets 3 points because the shape is not a parallelogram, a rhombus, or a square.  
 B Aliyah gets 4 points because the shape is not a square or a rhombus.  
 C Aliyah gets 4 points because the shape is not a polygon or a rhombus.  
 D Aliyah gets 5 points because the shape is not a rhombus.

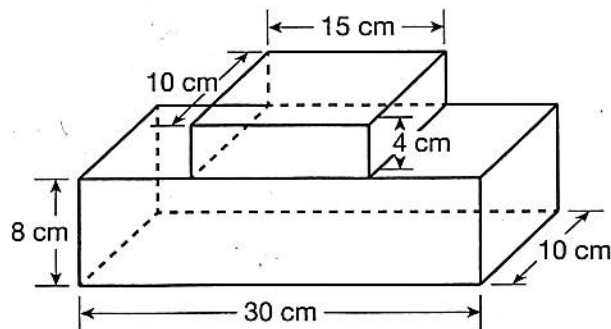
- 34 A highway sign is shown below.



If Lisa has driven 3,040 yards past the sign, for how many more yards does she have to watch out for workers?

- A 21,120 yards
- B 7,040 yards
- C 4,000 yards
- D 440 yards

- 35 An object is made by stacking two rectangular prisms as shown below.



[not drawn to scale]

What is the total volume of the object?

- A 600 cubic centimeters
- B 2,460 cubic centimeters
- C 3,000 cubic centimeters
- D 3,600 cubic centimeters

- 36 What is the value of the expression below?

$$217 \times 23$$

- A 4,991
- B 4,340
- C 4,212
- D 434

- 37 Which symbol makes the sentence true?

$$64.031 \text{ ? } 64.301$$

- A <
- B >
- C =
- D +

- 38 Jon buys 4 cartons of juice to serve at a party. Each carton contains  $1\frac{7}{8}$  quarts of juice. The guests at the party drink  $\frac{2}{3}$  of the juice. How much juice did the guests drink?

- A  $\frac{5}{16}$  quart
- B  $1\frac{1}{4}$  quarts
- C  $2\frac{2}{3}$  quarts
- D 5 quarts

- 39 What is the value of the expression below?

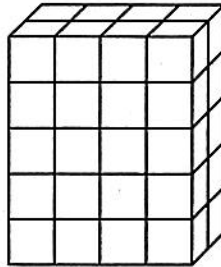
$$27.5 + 3.094 + 4.86$$

- A 38.55
- B 36.30
- C 35.454
- D 34.185

**40** There are 16 students in a school's photography club. To find the number of students in the school's chess club, you can multiply  $\frac{5}{4} \times 16$ . Which statement about the chess club is true?

- A There are fewer than 16 students in the chess club because the factor  $\frac{5}{4}$  is less than 1.
- B There are more than 16 students in the chess club because the factor  $\frac{5}{4}$  is greater than 1.
- C There are fewer than 16 students in the chess club because the denominator of  $\frac{5}{4}$  is less than its numerator.
- D There are 16 students in the chess club because the factor  $\frac{5}{4}$  rounds to 1.

**41** Each unit cube has a volume of one cubic inch. What is the volume of the bottom layer of this figure?

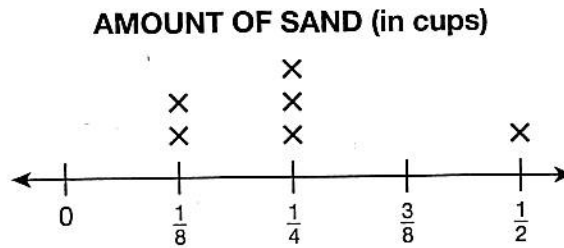


[not drawn to scale]

- A 2 cubic inches
- B 4 cubic inches
- C 5 cubic inches
- D 8 cubic inches

42

Felicity and her 5 classmates have identical glass jars each filled with different amounts of sand, as shown by the dot plot below.



The teacher asks the students to combine the sand they have in their jars. How much sand did Felicity and her classmates collect in all?

- A  $1\frac{5}{8}$  cups
- B  $1\frac{1}{2}$  cups
- C  $\frac{3}{4}$  cup
- D  $\frac{1}{6}$  cup

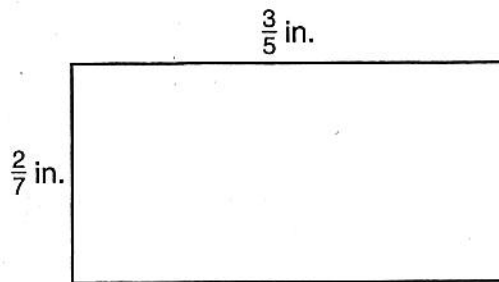
43

What problem can be represented by the expression  $\frac{1}{4} \div 3$ ?

- A Three people equally share  $\frac{1}{4}$  gallon of milk. How much milk does each person drink?
- B Three people each need  $\frac{1}{4}$  gallon of milk. How much milk is needed altogether?
- C Three people in your class like milk. This is  $\frac{1}{4}$  of your class. How many students are in your class?
- D Three people each have  $\frac{1}{4}$  gallon of milk. How much more milk is needed to make a full gallon?



- 44 What is the area of the rectangle below?



[not drawn to scale]

- A  $\frac{1}{35}$  square inch
- B  $\frac{6}{35}$  square inch
- C  $\frac{5}{12}$  square inch
- D  $\frac{27}{35}$  square inch

- 45 A stack of  $10^3$  \$1 bills is 4.3 inches tall. What is the thickness of one \$1 bill?

- A 4,300 inches
- B 0.043 inch
- C 0.0043 inch
- D 0.00043 inch

- 46 What is the value of the expression below?

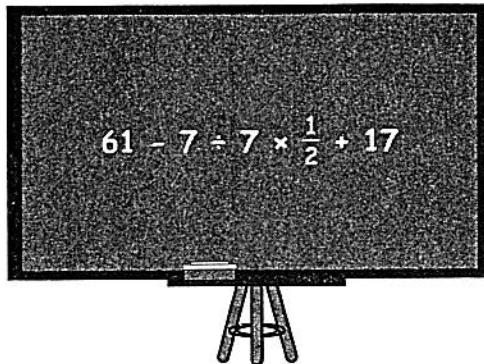
$$496 \times 217$$

- A 107,632
- B 107,630
- C 99,200
- D 8,432

**Go On**

- 47 Sophia cuts a 9-foot long board into 6 equal pieces for a project she is doing. What is the length of each piece?
- A 3 feet
  - B 2 feet
  - C  $1\frac{1}{2}$  feet
  - D  $\frac{1}{2}$  foot
- 48 Last year in Rockland, the total rainfall, rounded to the nearest tenth of an inch, was 48.6 inches. Which of these amounts could be the actual rainfall in Rockland last year?
- A 48.54 inches
  - B 48.62 inches
  - C 48.65 inches
  - D 48.67 inches
- 49 Jerrelle spent \$0.60 on five stickers. Each sticker costs the same amount. How much did each sticker cost?
- A \$0.06
  - B \$0.12
  - C \$1.20
  - D \$5

- 50 Ms. Solis wrote the following expression on the blackboard for her fifth-grade class.



Write the expression with parentheses so that it has a value of 47.

Answer \_\_\_\_\_

- 51 According to the United States Census Bureau, the population of New York City in 2013 was approximately 8,405,837. Use a power of 10 to describe how many times greater 8 is than the other 8 in the approximate population of New York City.

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- 52** We say that there are 365 days in a year, but a more precise measure of a year is 365.25 days. Write 365.25 in expanded form.

*Answer* \_\_\_\_\_

Write a sentence comparing the values of the 5s in 365.25.

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- 53** Of the students in the school musical,  $\frac{4}{5}$  have speaking parts. Of the students that have speaking parts,  $\frac{3}{4}$  also dance. There are 30 students in the musical. How many students have both speaking and dancing parts?

*Show your work.*

*Answer* \_\_\_\_\_ students

- 54** Carl made a tower by stacking 4 boxes. Three boxes are identical in size and shape. Each box has a length of 9 inches, width of 3 inches, and height of 3 inches. The fourth box is at the top, with the same length and width as the other boxes, but the height is 4 inches. What is the total volume of the tower?

*Show your work.*

*Answer* \_\_\_\_\_ inches

- 55** A regular-size cereal box is shaped like a rectangular prism. The length of the box is 8 inches and the width is 2 inches. The volume of the box is 176 cubic inches. A family-size cereal box has double the volume of the regular-size box, with the same height and width. What is the length of the family-size cereal box?

*Show your work.*

*Answer* \_\_\_\_\_ inches

**Go On**

**56**

A restaurant cook cuts up and mixes pineapple and orange slices for a fruit salad. There are three and five-tenths kilograms of pineapple and three and forty-six hundredths kilograms of oranges.

How much fruit salad will the cook have if it only contains oranges and pineapples?

*Show your work.*

*Answer* \_\_\_\_\_ kilograms

The fruit salad should be enough to make 48 same-size servings. What will the mass of each serving be? Round your answer to the nearest hundredth.

*Show your work.*

*Answer* \_\_\_\_\_ kilograms

**57**

Todd's eighth grade class will help run the fun fair this Saturday. The fair will last 6 hours.

Every half an hour a different eighth grader was appointed to work at the face painting booth. How many eighth-graders are needed to work at the face painting booth during the fair?

*Show your work.*

*Answer* \_\_\_\_\_ eighth graders

Todd has volunteered to work at the popcorn stand for  $\frac{3}{4}$  hour. His friend, Jim, said that he would help Todd for  $\frac{2}{3}$  of the time. How many minutes will Todd work at the popcorn stand **without** Jim?

*Show your work.*

*Answer* \_\_\_\_\_ minutes

**58**

The *John Boy Peanut Butter Company* produces 145 pounds of peanut butter in a day. Each jar they fill holds 18 ounces of peanut butter. Each crate they ship can hold 24 jars.

How many jars can they fill with one day's production of peanut butter?

*Show your work.*

*Answer* \_\_\_\_\_ jars

How many full crates can they ship with a day's worth of jars?

*Show your work.*

*Answer* \_\_\_\_\_ crates



**59**

Beth rode her bike for the following distances each day:

- On Monday, she rode  $3\frac{1}{4}$  miles.
- On Tuesday, she rode  $\frac{2}{3}$  the distance she rode on Monday.
- On Wednesday, she rode twice the distance she rode on Tuesday.
- On Thursday, she rode  $\frac{3}{4}$  the distance she rode on Wednesday.

Beth's goal is to ride 15 miles altogether. Has she achieved her goal? If not, how far does she need to ride the bike to reach her goal?

*Show your work.*

Explain your reasoning.

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# Reference Sheet

## Grade 5 Mathematics Reference Sheet

### CONVERSIONS

1 mile = 5,280 feet  
1 mile = 1,760 yards

1 pound = 16 ounces  
1 ton = 2,000 pounds

1 cup = 8 fluid ounces  
1 pint = 2 cups  
1 quart = 2 pints  
1 gallon = 4 quarts  
1 liter = 1,000 cubic centimeters

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### FORMULAS

Right Rectangular Prism

$$V = Bh \text{ or } V = lwh$$

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