School-Home Letter

Vocabulary

interval The difference between one number and the next on the scale of a graph

line graph A graph that uses line segments to show how data changes over time

scale A series of numbers placed at fixed distances on a graph to help label the graph

x-axis The horizontal number line on a coordinate plane
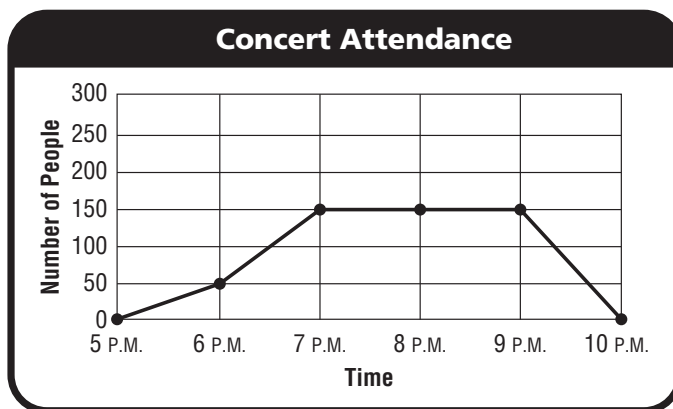
x-coordinate The first number in an ordered pair, which tells the distance to move right or left from (0, 0)

y-axis The vertical number line on a coordinate plane

y-coordinate The second number in an ordered pair, which tells the distance to move up or down from (0, 0)

Dear Family,

Throughout the next few weeks, our math class will be working with data and graphs. We will learn how to make and use line plots and line graphs to analyze data and solve problems. We will also learn how to plot and name points on a coordinate grid.

You can expect to see homework that includes making and analyzing line graphs.

Here is a sample of how your child will be taught to interpret line graphs.

🔑 MODEL   Analyze Line Graphs

This is how we will analyze line graphs.

Concert Attendance

Tips

Choose an Appropriate Graph

The type of data being reported will help determine what type of graph can be used to visually display the data. Line graphs are a good way to display data that change over time.

Use the graph to identify between what times the concert attendance increased the most.

STEP 1 Look at each segment in the graph.

STEP 2 Find the segment that shows the greatest increase in number of people between two consecutive points.

The greatest increase in the number of people occurred between 6 P.M. and 7 P.M.

Activity

Look through a few newspapers or magazines to find data displays. Then work together to write and answer questions about the information displayed.

Carta para la casa

Vocabulario

intervalo La diferencia entre un número y el siguiente en la escala de una gráfica

gráfica lineal Una gráfica que usa segmentos para mostrar cómo los datos cambian con el tiempo

escala Una serie de números colocados a distancias fijas en una gráfica que permite rotular la gráfica

**eje de la *x*** La recta numérica horizontal en un plano de coordenadas

eje de la *y* La recta numérica vertical en un plano de coordenadas

coordenada *x* El primer número de un par ordenado que muestra la distancia para moverse hacia la derecha o la izquierda desde $(0, 0)$

coordenada *y* El segundo número de un par ordenado que muestra la distancia para moverse hacia arriba o hacia abajo desde $(0, 0)$

Querida familia,

Durante las próximas semanas, en la clase de matemáticas vamos a trabajar con datos y gráficas. Aprenderemos cómo hacer y usar diagramas de puntos y gráficas lineales para analizar datos y resolver problemas. También aprenderemos a anotar y nombrar los puntos en una cuadrícula de coordenadas.

Llevaré a la casa tareas para aprender a hacer y analizar gráficas lineales.

Este es un ejemplo de la manera como aprenderemos a interpretar gráficas lineales.

MODELO Interpretar gráficas lineales

Así es como interpretamos las gráficas lineales.

Asistencia al concierto
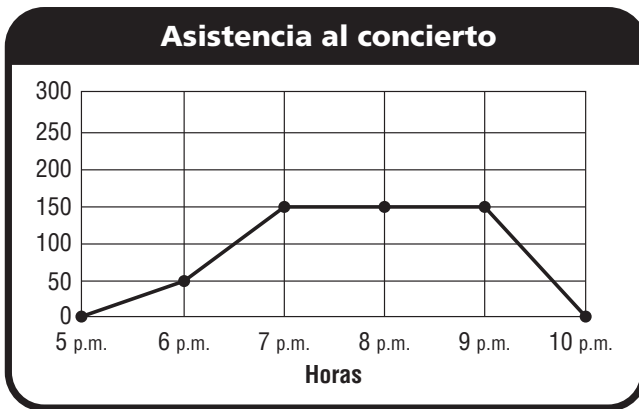
Usa la gráfica para identificar entre qué horas aumentó más la asistencia al concierto.

PASO 1 Analiza cada segmento de la gráfica.

PASO 2 Halla el segmento que muestre el mayor aumento de la cantidad de personas entre dos puntos consecutivos.
El mayor aumento en la cantidad de personas ocurrió entre las 6 y las 7 P.M.

Pistas

Elegir una gráfica adecuada

El tipo de datos que se van a reportar, determina el tipo de gráfica que se puede usar para mostrar esos datos. Las gráficas lineales nos permiten mostrar datos que cambian con el tiempo.

Actividad

Busquen datos presentados de diferentes formas en periódicos y revistas. Después escriban y contesten juntos preguntas sobre la información que se muestra.

Name _____

Line Plots

Use the data to complete the line plot. Then answer the questions.

A clerk in a health food store makes bags of trail mix. The amount of trail mix in each bag is listed below.

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

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

1. What is the combined weight of the $\frac{1}{4}$-lb bags? **1 lb**

   Think: There are four $\frac{1}{4}$-pound bags.

2. What is the combined weight of the $\frac{1}{2}$-lb bags? _____

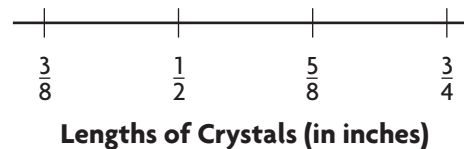3. What is the combined weight of the $\frac{3}{4}$-lb bags? _____

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

Weight of Trail Mix (in pounds)

4. What is the total weight of the trail mix used in

   all the bags? _____

5. What is the average amount of trail mix in each bag? _____

Julie uses crystals to make a bracelet. The lengths of the crystals are shown below.

$$\frac{1}{2} \text{ in.}, \frac{5}{8} \text{ in.}, \frac{3}{4} \text{ in.}, \frac{1}{2} \text{ in.}, \frac{3}{8} \text{ in.}, \frac{1}{2} \text{ in.}, \frac{3}{4} \text{ in.},$$

$$\frac{3}{8} \text{ in.}, \frac{3}{4} \text{ in.}, \frac{5}{8} \text{ in.}, \frac{1}{2} \text{ in.}, \frac{3}{8} \text{ in.}, \frac{5}{8} \text{ in.}, \frac{3}{4} \text{ in.}$$

$\frac{3}{8}$	$\frac{1}{2}$	$\frac{5}{8}$	$\frac{3}{4}$

Lengths of Crystals (in inches)

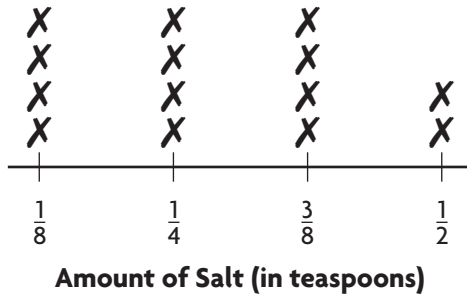6. What is the combined length of the $\frac{1}{2}$-in. crystals? _____

7. What is the combined length of the $\frac{5}{8}$-in. crystals? _____

8. What is the total length of all the crystals in the bracelet? _____

9. What is the average length of each crystal in the bracelet? _____

Lesson Check

A baker uses different amounts of salt when she bakes loaves of bread, depending on which recipe she is following. The amount of salt called for in each recipe is shown on the line plot.

X   X   X
X   X   X
X   X   X   X
X   X   X   X
+--------+--------+--------+
$\frac{1}{8}$ $\frac{1}{4}$ $\frac{3}{8}$ $\frac{1}{2}$

Amount of Salt (in teaspoons)

1. Based on the line plot, how many recipes call for more than $\frac{1}{4}$ tsp of salt?

   (A) 4   (C) 8

   (B) 6   (D) 12

2. What is the average amount of salt called for in each recipe?

   (A) $\frac{1}{8}$ tsp   (C) $\frac{2}{7}$ tsp

   (B) $\frac{1}{4}$ tsp   (D) $\frac{1}{2}$ tsp

Spiral Review

3. Ramona had $8\frac{3}{8}$ in. of ribbon. She used $2\frac{1}{2}$ in. for an art project. How many inches of ribbon does she have left? Find the difference in simplest form. **(Lesson 6.7)**

   (A) $5\frac{1}{8}$ in.

   (B) $5\frac{7}{8}$ in.

   (C) $6\frac{1}{8}$ in.

   (D) $6\frac{1}{6}$ in.

4. Ben bought $\frac{1}{2}$ pound of cheese for 3 sandwiches. If he puts the same amount of cheese on each sandwich, how much cheese will each sandwich have? **(Lesson 8.4)**

   (A) $\frac{1}{6}$ lb

   (B) $\frac{2}{3}$ lb

   (C) $1\frac{1}{2}$ lb

   (D) 6 lb

5. What is 92.583 rounded to the nearest tenth? **(Lesson 3.4)**

   (A) 90

   (B) 92.5

   (C) 92.58

   (D) 92.6

6. In Yoshi's garden, $\frac{3}{4}$ of the flowers are tulips. Of the tulips, $\frac{2}{3}$ are yellow. What fraction of the flowers in Yoshi's garden are yellow tulips? **(Lesson 7.6)**

   (A) $\frac{1}{12}$

   (B) $\frac{5}{12}$

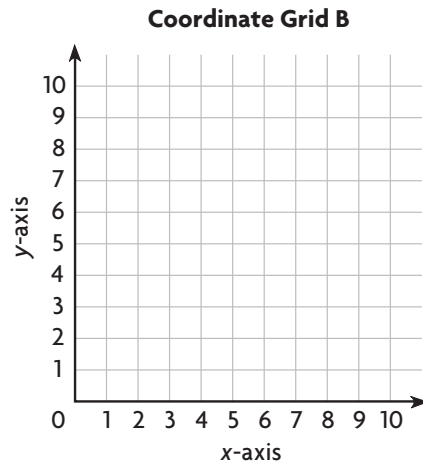   (C) $\frac{1}{2}$

   (D) $\frac{5}{7}$

Name _____

Ordered Pairs

Use Coordinate Grid A to write an ordered pair for the given point.

1. A **(2, 3)**

2. B

3. C

4. D

5. E

6. F
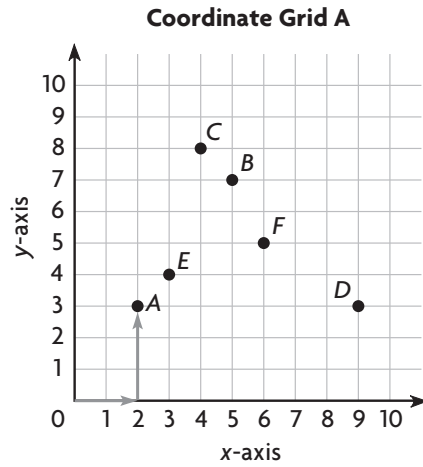
Coordinate Grid A

Plot and label the points on Coordinate Grid B.

7. N (7, 3)

8. R (0, 4)

9. O (8, 7)

10. M (2, 1)

11. P (5, 6)
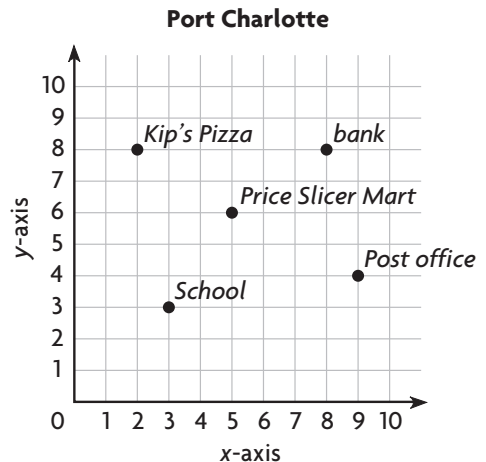
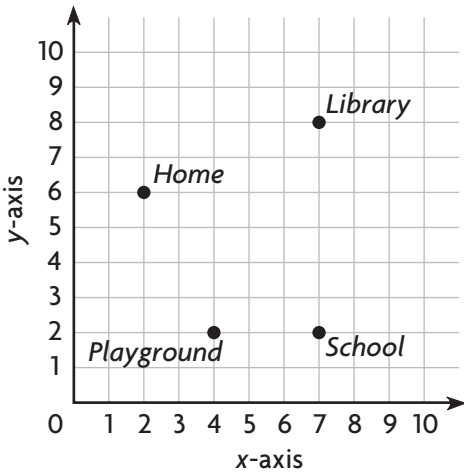**12.** Q (1, 5)

Coordinate Grid B

Problem Solving REAL WORLD

Use the map for 13–14.

13. Which building is located at (5, 6)?

_____

14. What is the distance between Kip's Pizza and the bank?

_____

Port Charlotte

Lesson Check

1. Which ordered pair describes the location of the playground?

   (A) (2, 4)   (C) (3, 1)

   (B) (4, 2)   (D) (1, 3)

2. What is the distance between the school and the library?

   (A) 5 units   (C) 7 units

   (B) 6 units   (D) 9 units

Spiral Review

3. What is the value of the underlined digit? (Lesson 1.2)

   45,7<u>6</u>9,331

   (A) 60

   (B) 6,000

   (C) 60,000

   (D) 70,000

4. Andrew charges $18 for each lawn he mows. Suppose he mows 17 lawns per month. How much money will Andrew make per month? (Lesson 1.7)

   (A) $305

   (B) $306

   (C) $350

   (D) $360

5. Harlow can bicycle at a rate of 18 miles per hour. How many hours would it take him to bicycle a stretch of road that is 450 miles long? (Lesson 2.6)

   (A) 20 hours

   (B) 25 hours

   (C) 30 hours

   (D) 35 hours

6. Molly uses 192 beads to make a bracelet and a necklace. It takes 5 times as many beads to make a necklace than it does to make a bracelet. How many beads are used to make the necklace? (Lesson 2.9)

   (A) 32

   (B) 37

   (C) 160

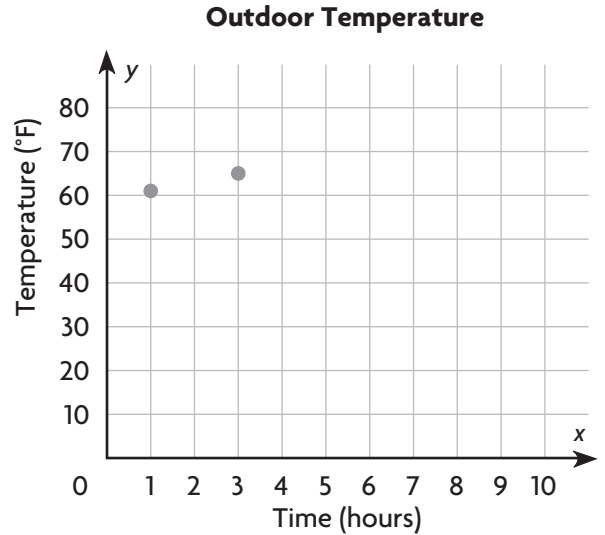   (D) 165

Name _____

Graph Data

Graph the data on the coordinate grid.

1.

Outdoor Temperature					
Hour	1	3	5	7	9
Temperature (°F)	61	65	71	75	77

a. Write the ordered pairs for each point.

_____

_____

b. How would the ordered pairs be different if the outdoor temperature were recorded every hour for 4 consecutive hours?
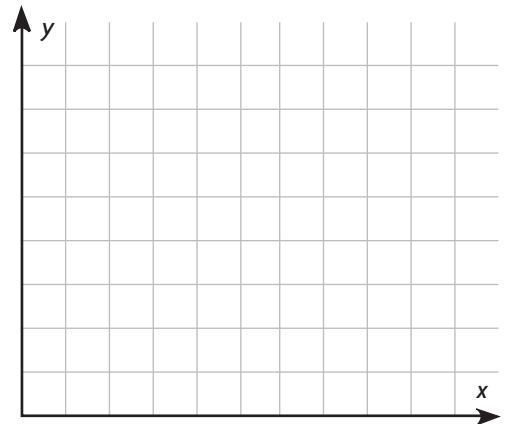
_____

_____

_____

_____

Outdoor Temperature

Problem Solving REAL WORLD

2.

Windows Repaired					
Day	1	2	3	4	5
Total Number Repaired	14	30	45	63	79

a. Write the ordered pairs for each point.

_____

_____

b. What does the ordered pair (2, 30) tell you about the number of windows repaired?

_____

_____

Lesson Check

Amount of Dog Food Consumed
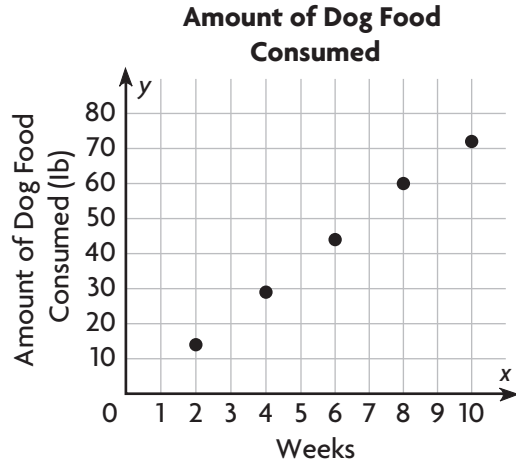
1. About how many weeks did it take for the dog to consume 45 pounds of food?

   (A) 4 weeks   (C) 6 weeks

   (B) 5 weeks   (D) 7 weeks

2. By the end of Week 8, how much food had the dog consumed?

   (A) 29 pounds   (C) 60 pounds

   (B) 44 pounds   (D) 72 pounds

Spiral Review

3. A restaurant chain ordered 3,945 pounds of rice in 20-pound bags. About how many 20-pound bags of rice did the chain order? **(Lesson 2.5)**

   (A) 4,000

   (B) 2,000

   (C) 200

   (D) 20

4. The population of Linton is 12 times as great as the population of Ellmore. The combined population of both towns is 9,646 people. What is the population of Linton? **(Lesson 2.9)**

   (A) 742

   (B) 804

   (C) 8,904

   (D) 9,634

5. Timothy needs $\frac{1}{2}$ cup of bread crumbs for a casserole and $\frac{1}{3}$ cup of bread crumbs for the topping. How many cups of bread crumbs does Timothy need? **(Lesson 6.1)**

   (A) $\frac{1}{5}$ cup

   (B) $\frac{1}{3}$ cup

   (C) $\frac{2}{5}$ cup

   (D) $\frac{5}{6}$ cup

6. Jessie bought 3 T-shirts for $6 each and 4 T-shirts for $5 each. Which expression can you use to describe what Jessie bought? **(Lesson 1.10)**

   (A) $3 + 6 + 4 + 5$

   (B) $(3 + 6) \times (4 + 5)$

   (C) $(3 \times 6) + (4 \times 5)$

   (D) $(3 \times 6) \times (4 \times 5)$

Name _____

Line Graphs

Use the table for 1–5.

Hourly Temperature							
Time	10 A.M.	11 A.M.	12 noon	1 P.M.	2 P.M.	3 P.M.	4 P.M.
Temperature (°F)	8	11	16	27	31	38	41

1. Write the related number pairs for the hourly temperature as ordered pairs.
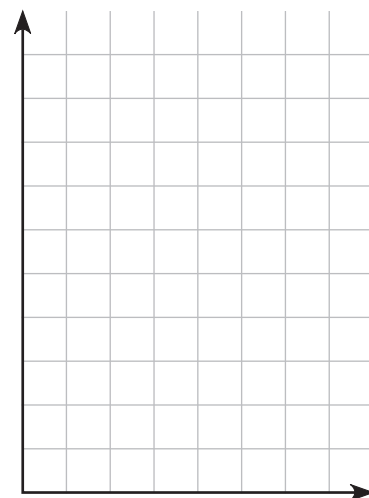
   (10, 8); _____

   _____

2. What scale would be appropriate to graph the data?

   _____

3. What interval would be appropriate to graph the data?

   _____

4. Make a line graph of the data.

   _____

5. Use the graph to find the difference in temperature between 11 A.M. and 1 P.M.
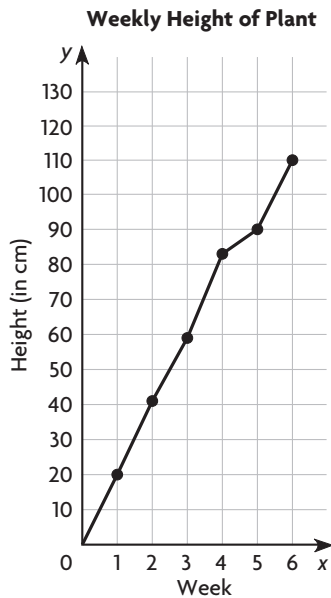
   _____

Problem Solving REAL WORLD

6. Between which two hours did the least change in temperature occur?

   _____

   _____

7. What was the change in temperature between 12 noon and 4 P.M.?

   _____

Lesson Check

Weekly Height of Plant

1. How many centimeters did the plant grow in the first three weeks?

   (A) 20 cm   (C) 59 cm

   (B) 41 cm   (D) 83 cm

2. Between which two weeks did the plant grow the least?

   (A) Weeks 2 and 3

   (B) Weeks 3 and 4

   (C) Weeks 4 and 5

   (D) Weeks 5 and 6

Spiral Review

3. Which shows the correct use of the Distributive Property to find the product of 7×63? **(Lesson 1.10)**

   (A) $(7 \times 60) \times (7 \times 3)$

   (B) $(7 + 60) \times (7 + 3)$

   (C) $(7 \times 60) + (7 \times 3)$

   (D) $7 + (60 \times 3)$

4. Ali multiplies 3 numbers using the expressions $a \times (b \times c)$ and $(a \times b) \times c$. Which property of multiplication does Ali use? **(Lesson 1.3)**

   (A) Associative Property of Multiplication

   (B) Commutative Property of Multiplication

   (C) Distributive Property of Multiplication

   (D) Identity Property of Multiplication

5. A student athlete runs $3\frac{1}{3}$ miles in 30 minutes. A professional runner can run $1\frac{1}{4}$ times as far in 30 minutes. How far can the professional runner run in 30 minutes?
   (Lesson 7.9)

   (A) $3\frac{1}{12}$ miles   (C) $4\frac{2}{7}$ miles

   (B) $4\frac{1}{6}$ miles   (D) $4\frac{7}{12}$ miles

6. A recipe for salad dressing calls for $\frac{1}{4}$ cup of vinegar. You have 4 cups of vinegar. How many batches of salad dressing could you make with the vinegar? **(Lesson 8.4)**

   (A)   1

   (B)   4

   (C)   8

   (D)   16

Name _____

Numerical Patterns

Complete the rule that describes how one sequence is related to the other. Use the rule to find the unknown term.

1. Multiply the number of laps by __**50**__ to find the number of yards.

    Think: The number of yards is 50 times the number of laps.

Swimmers	1	2	3	4
Number of Laps	4	8	12	16
Number of Yards	200	400	600	**800**

2. Multiply the number of pounds by _____ to find total cost.

Boxes	1	2	3	4	6
Number of Pounds	3	6	9	12	18
Total Cost ($)	12	24	36	48	

3. Multiply the number of hours by _____ to find the number of miles.

Cars	1	2	3	4
Number of Hours	2	4	6	8
Number of Miles	130	260	390	

4. Multiply the number of hours by _____ to find the amount earned.

Days	1	2	3	4	7
Number of Hours	8	16	24	32	56
Amount Earned ($)	96	192	288	384	

Problem Solving REAL WORLD

5. A map distance of 5 inches represents 200 miles of actual distance. Suppose the distance between two cities on the map is 7 inches. What is the actual distance between the two cities? Write the rule you used to find the actual distance.

_____

_____

_____

6. To make one costume, Rachel uses 6 yards of material and 3 yards of trim. Suppose she uses a total of 48 yards of material to make several costumes. How many yards of trim does she use? Write the rule you used to find the number of yards of trim.

_____

_____

_____

Lesson Check

Use the table below to answer questions 1 and 2.

Term Number	1	2	3	4	6
Sequence 1	4	8	12	16	24
Sequence 2	12	24	36	48	?

1. What rule could you write that relates Sequence 2 to Sequence 1?

   (A) Add 8.

   (B) Multiply by 3.

   (C) Multiply by 4.

   (D) Add 48.

2. What is the unknown number in Sequence 2?

   (A) 48   (C) 72

   (B) 60   (D) 96

Spiral Review

3. What is the value of the following expression? **(Lesson 1.12)**

$$40 - (3 + 2) \times 6$$

   (A) 10

   (B) 49

   (C) 210

   (D) 234

4. What is the value of the digit 9 in the number 597,184? **(Lesson 1.2)**

   (A)   900

   (B)   9,000

   (C)   90,000

   (D) 900,000

5. Which is the best estimate for the sum of $\frac{3}{8}$ and $\frac{1}{12}$? **(Lesson 6.3)**

   (A) 0

   (B) $\frac{1}{2}$

   (C) 1

   (D) 4

6. Terry uses 3 cups of pecans to decorate the tops of 12 pecan pies. She puts an equal amount of pecans on each pie. How many cups of pecans does she put on each pie? **(Lesson 8.3)**

   (A) 9 cups

   (B) 4 cups

   (C) $\frac{1}{3}$ cup

   (D) $\frac{1}{4}$ cup

PROBLEM SOLVING

Lesson 9.6

Problem Solving • Find a Rule

Write a rule and complete the table. Then answer the question.

1. Faye buys 15 T-shirts, which are on sale for $3 each. How much money does Faye spend?

Number of T-Shirts	1	2	3	5	10	15
Amount Spent ($)	3	6	9			

Possible rule:
Multiply the number of T-shirts by 3.

The total amount Faye spends is ___**$45**___.

2. The Gilman family joins a fitness center. They pay $35 per month. By the 12th month, how much money will the Gilman family have spent?

Number of Months	1	2	3	4	5	12
Total Amount of Money Spent ($)	35	70				

Possible rule:
_____

_____

The Gilman family will have spent _____.

3. Hettie is stacking paper cups. Each stack of 15 cups is 6 inches high. What is the total height of 10 stacks of cups?
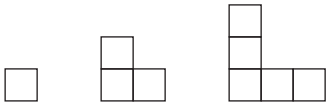
Number of stacks	1	2	3	10
Height (in.)	6	12	18	

Possible rule:
_____

_____

The total height of 10 stacks is _____.

Lesson Check

1. How many squares are needed to make the eighth figure in the pattern?

- **(A)** 14
- **(B)** 15
- **(C)** 16
- **(D)** 17

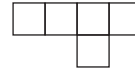**2.** Which expression could describe the number of squares in the next figure in the pattern, Figure 4?
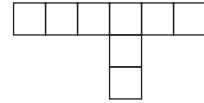
Figure 1	Figure 2	Figure 3

2 squares   5 squares   8 squares

- **(A)** 6 + 2
- **(B)** 6 + 3
- **(C)** 8 + 3
- **(D)** 8 + 4

Spiral Review

3. A bakery displays their cookies equally on 7 trays. If there are 567 cookies, how many cookies are on each tray? **(Lesson 2.2)**

- **(A)** 487
- **(B)** 486
- **(C)** 81
- **(D)** 80

4. Ms. Angelino made 2 pans of lasagna and cut each pan into twelfths. Her family ate $1\frac{1}{12}$ pans of lasagna for dinner. How many pans of lasagna were left? **(Lesson 6.7)**

- **(A)** $\frac{11}{12}$
- **(B)** $1\frac{11}{12}$
- **(C)** $2\frac{1}{12}$
- **(D)** $3\frac{1}{12}$

5. What is the next number in this pattern? **(Lesson 3.10)**

0.54, 0.6, 0.66, 0.72, ■, . . .

- **(A)** 0.76
- **(B)** 0.78
- **(C)** 0.8
- **(D)** 0.82

6. How do you write 100 as a power of 10? **(Lesson 1.4)**

- **(A)** 10^0
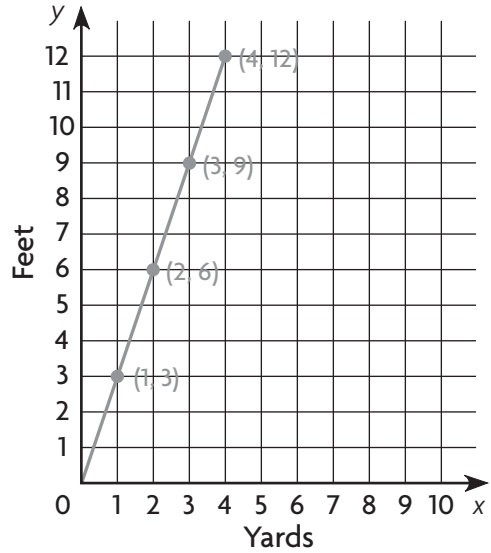- **(B)** 10^1
- **(C)** 10^2
- **(D)** 10^3

Name _____

Graph and Analyze Relationships

Graph and label the related number pairs as ordered pairs. Then complete and use the rule to find the unknown term.
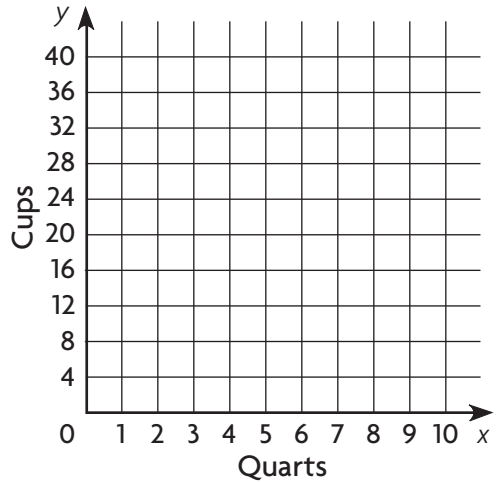
1. Multiply the number of yards by ____**3**____ to find the number of feet.

Yards	1	2	3	4
Feet	3	6	9	**12**

2. Multiply the number of quarts by _____ to find the number of cups that measure the same amount.

Quarts	1	2	3	4	5
Cups	4	8	12	16	

Problem Solving REAL WORLD

3. How can you use the graph for Exercise 2 to find how many cups are in 9 quarts?

_____

_____

_____

_____

_____

4. How many cups are equal to 9 quarts? _____

Lesson Check

Use the data to complete the graph. Then answer the questions.

Paola is making a pitcher of iced tea. For each cup of water, she uses 3 tablespoons of powdered iced tea mix.
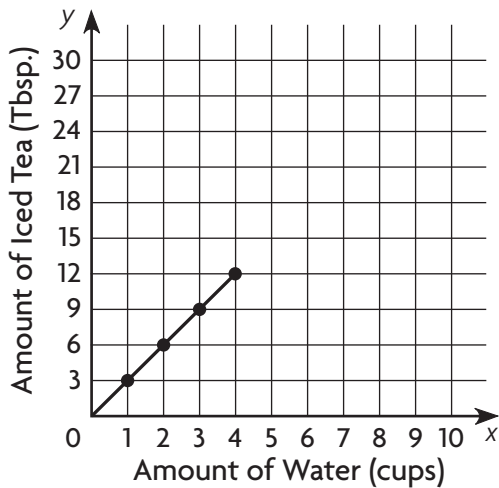
1. What rule relates the amount of iced tea mix to the amount of water?

(A) Multiply the amount of mix by 6.

(B) Multiply the amount of mix by 3.

(C) Multiply the amount of mix by $\frac{1}{3}$.

(D) Multiply the amount of mix by $\frac{1}{6}$.

2. Suppose Paola uses 18 tablespoons of iced tea mix. How many cups of water does she need to use?

(A)   3 cups

(B)   6 cups

(C)   9 cups

(D) 54 cups

Spiral Review

3. A biologist counted 10,000 migrating monarch butterflies. How do you express 10,000 as a power of 10? **(Lesson 1.4)**

(A) 10^2

(B) 10^3

(C) 10^4

(D) 10^5

4. For which expression will the quotient be greater than 100? **(Lesson 2.6)**

(A) $5,394 \div 57$

(B) $6,710 \div 69$

(C) $7,198 \div 74$

(D) $8,426 \div 82$

5. What is $54.38 + 29.7$? **(Lesson 3.8)**

(A) 57.35

(B) 83.45

(C) 83.08

(D) 84.08

6. On a certain day, $1 is worth 30.23 Russian rubles. Omar has $75. How many rubles will he get in exchange? **(Lesson 4.5)**

(A) 2,267.25

(B) 2,256.25

(C)   362.76

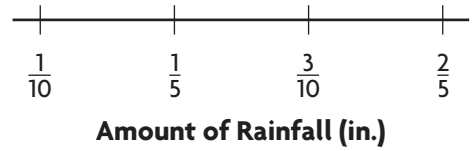(D)   2.48

Chapter 9 Extra Practice

Lesson 9.1

Use the data to complete the line plot. Then answer the questions.

1. Annabelle measured and recorded the amount of rainfall for 9 days in a row. Her results are shown below.

   $\frac{3}{10}$ in., $\frac{1}{5}$ in., $\frac{1}{10}$ in., $\frac{1}{10}$ in., $\frac{3}{10}$ in.,
   $\frac{2}{5}$ in., $\frac{1}{5}$ in., $\frac{1}{5}$ in., $\frac{1}{5}$ in.

2. What was the average amount of rainfall per day for the 9-day period?

$$\frac{1}{10} \qquad \frac{1}{5} \qquad \frac{3}{10} \qquad \frac{2}{5}$$

Amount of Rainfall (in.)

_____

Lesson 9.2

Use the coordinate grid to write an ordered pair for the given point.

1. *A*

   _____

2. *F*

   _____

3. *L*

   _____

4. *C*

   _____

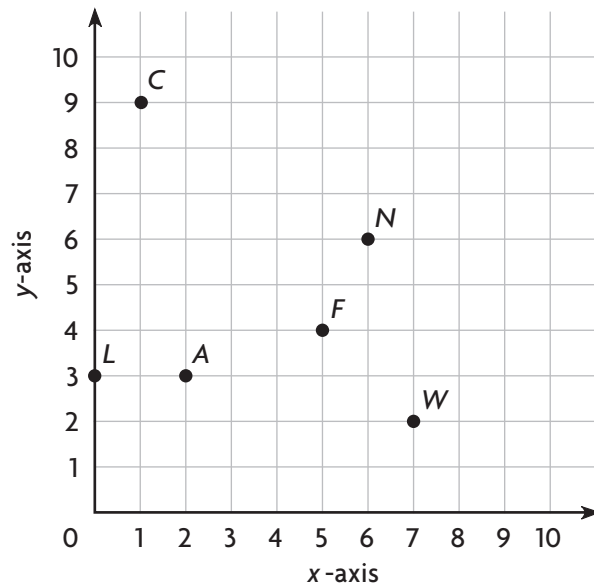5. *N*

   _____

6. *W*

   _____

Plot and label the points on the coordinate grid.

7. *P* (6, 0)   8. *T* (2, 8)   9. *M* (8, 10)

10. *R* (9, 0)   11. *Q* (0, 0)   12. *D* (2, 1)
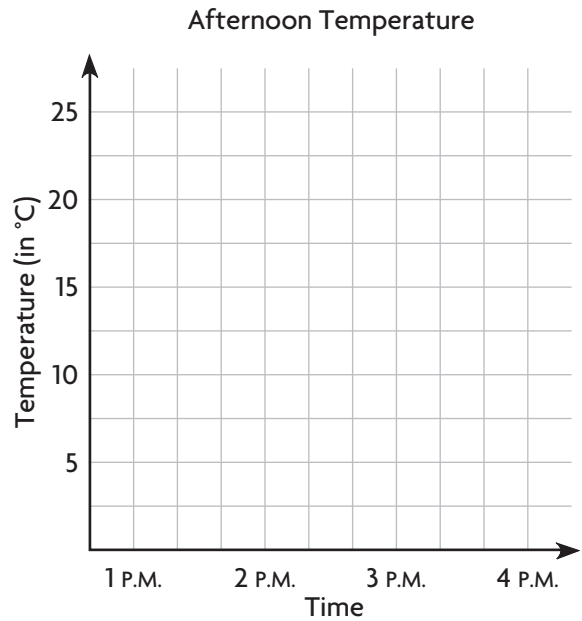
Lessons 9.3 - 9.4

Use the table for 1–2.

1. Make a line graph of the data.

Afternoon Temperature				
Time	1 P.M.	2 P.M.	3 P.M.	4 P.M.
Temperature (in °C)	15	25	20	12

2. Use the graph to find the difference in temperature between 2 P.M. and 3 P.M.

_____

Afternoon Temperature

(graph with y-axis "Temperature (in °C)" marked 5, 10, 15, 20, 25 and x-axis "Time" marked 1 P.M., 2 P.M., 3 P.M., 4 P.M.)

Lessons 9.5 - 9.7

Graph and label the related number pairs as ordered pairs. Then complete and use the rule to find the unknown term.

1. Multiply the gallons of gas by _____ to find the miles traveled per gallon.

Gallons of Gas	1	2	3	4	5
Number of Miles Traveled per Gallon	19	38	57		

2. Multiply the minutes by _____ to find the total number of seconds.

Minutes	1	2	3	5
Seconds	60	120	180	

(graph with y-axis "Miles Traveled" marked 10–100 and x-axis "Gas (in gal)" marked 1–10 x)

(graph with y-axis "Seconds" marked 30–300 and x-axis "Minutes" marked 1–10 x)