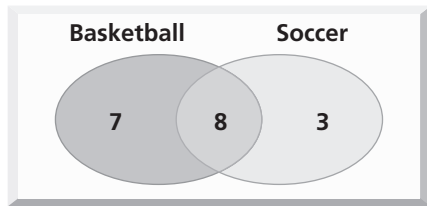**Lesson 1-1 Practice: Problem Solving**

Solve.

1 **SPORTS**   In Mr. Rivera's class, some students play basketball, some play soccer, and some play both basketball and soccer. There are 30 people in the class. How many students do not play either basketball or soccer?

_____

| Basketball | Soccer |
| 7 | 8 | 3 |

2 **SHOPPING**   Amber was shopping at the grocery store and noticed that some fruits and vegetables are red, some are green, and some can be either red or green. She wrote down the names of the fruits and vegetables in the list below. Use the Venn diagram to sort them into the categories Red, Green, Both, and Neither.

Fruits and Vegetables

Apples	Peppers
Oranges	Broccoli
Grapes	Beets
Celery	Grapefruit
Strawberries	Lemons

3 **ALPHABET**   Ben noticed that some letters are made of straight lines and some are made of curved lines. Using the letters shown below, construct a Venn diagram to show how the letters are sorted into Letters Made With Straight Lines and Letters Made With Curved Lines.

E O Z T U P D L B A

4 **NUMBER SENSE**   Juan listed the first ten whole numbers divisible by 4:

4, 8, 12, 16, 20, 24, 28, 32, 36, 40

Leon listed the first ten whole numbers divisible by 6:

6, 12, 18, 24, 30, 36, 42, 48, 54, 60

The boys made a Venn diagram of the lists. What numbers are divisible by both 4 and 6?
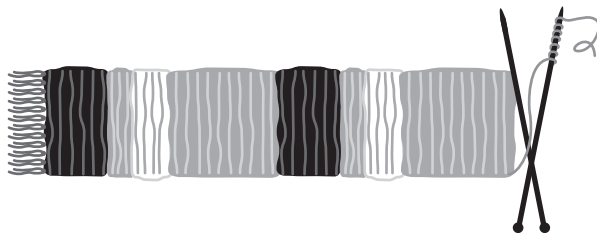
_____

Practice: Problem Solving

Solve.

1 **TILING** Mr. Jackson is putting tiles on his bathroom wall. He is using the pattern below. What is the next tile in the pattern?   _____

2 **KNITTING** Cassandra is knitting a black, grey, and white scarf in the pattern below. What is the color of the next block she will knit?   _____

3 **INTERIOR DESIGN** Sandy is putting a border around the wall of her room using the pattern below. What are the next three designs in the border?   _____

4 **GARDENING** Jeremy is putting a border of daisies and tulips around the perimeter of his house in the pattern below. What flower will he plant next?   _____

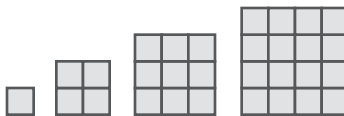**5** **LANDSCAPE DESIGN** Cleon is laying a border of bricks around his garden in the pattern below. What are the repeating terms of the pattern?   _____

Math Triumphs

Practice: Problem Solving

Solve.

1 **BANKING** Leo saves $4 each week. How much money does Leo save in 6 weeks? _____

Week	1	2	3	4	5	6
Amount Saved	$4					

2 **DESIGN** Candace created the pattern below. How many squares are in the 5th term of the pattern? _____

3 **PIZZA** The Pizza Place sells a large pizza for $7.50. You can buy a second large pizza for $7.25, and a third for $7.00. If this pattern continues, how much would the fifth large pizza cost? _____

4 **VIDEO** Dion rented eight DVDs. Each rental costs $3. How much did Dion spend on all of the DVDs? _____

Number of DVDs	1	2	3	4	5	6	7	8
Cost	$3							

5 **COMMUTING** Mr. Harris drives 12 miles to and from work each weekday. After 4 weeks, not including the weekends, how many miles has Mr. Harris commuted to and from work? _____

6 **PACKAGING** Jason bought 6 packages of cookies to share with the students in his grade. If each package contains 15 cookies, how many cookies did Jason buy? _____

7 **INTERIOR DESIGN** Cara is painting the following pattern on her kitchen wall.

If the pattern continues, how many blue triangles are in the sixth term? _____

How many orange triangles are in the sixth term? _____

How many triangles are in the sixth term in all? _____

Lesson 1-4

Practice: Problem Solving

Solve.

1. **AMUSEMENT PARKS** A Ferris wheel has 20 cars. Each car holds 6 people. What is the greatest number of people who can ride the Ferris wheel at one time? _____

2. **JOBS** A plumber charges a one-time fee of $50, plus an hourly fee of $25. How much does the plumber earn in 3 hours of work at a customer's house? _____

3. **FOOD** Refer to the menu shown at the right. Mo bought a large pizza with 3 toppings. How much did she spend in all? _____

> **Pizza Palace**
> **BUILD YOUR OWN PIZZA**
>
> Large Pizza $8.00
> Additional Toppings $1.00 each
>
> Extra cheese, olives, mushrooms, onions,
> extra sauce, pineapples, peppers, ham,
> sausage, pepperoni

4. **BAKING** Chris baked 96 oatmeal cookies. How many dozen cookies did he bake? _____

5. **EARNINGS** Sam earns $7 per hour for baby-sitting and $10 per hour for mowing lawns. Last week, he baby-sat for 10 hours and mowed lawns for 12 hours. How much did Sam earn last week? _____

6. **AGES** Marilyn is 27 years younger than her mother. Marilyn is 15 years old. How old is her mother? _____

7. **PACKAGING** Ted bought a six-pack of water. Each bottle of water contains 16 fluid ounces. Knowing there are 32 ounces in a quart, how many quarts of water did Ted buy? _____

8. **TECHNOLOGY** A laser printer prints 25 pages per minute. How many pages can the printer print in 2 hours? _____

9. **ADVERTISEMENTS** William placed the ad shown at the right in the newspaper. The newspaper charges $15 for the first 10 words and $0.50 per word for each additional word. A phone number counts as one word. How much did it cost William to place the ad in the newspaper? _____

> **FOR SALE:**
> Bicycle for sale. A beautiful, red, slightly used mountain bike for sale. Best offer. Call William at 555-5656.

Math Triumphs
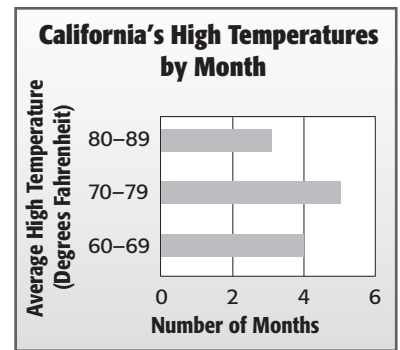
Lesson 2-1

Practice: Problem Solving

Solve.

1 **DIGITS** Emilio noticed that digits are written with straight lines, curved lines, or both straight and curved lines. Examine the digits. Create a tally chart to record the results. What type of lines form most digits?

Straight, Curved or Both	
Characteristic	Number of Digits

1 2 3 4 5
6 7 8 9 0

2 **TEMPERATURE** Madison recorded average high temperatures in California each month for one year. The results are shown in a bar graph. What temperature range do most of the months fall into? How many months are in this range?

California's High Temperatures by Month

3 **GAMES** An online game company offers 300 games. The number of each type of game offered is shown in the picture graph. Find the number of each type of game. What is the largest category by offered the online game company?

Online Games	
Type of Game	Number of Games
Arcade	🖰 🖰 🖰
Card & Board	🖰 🖰
Puzzle	🖰 🖰 🖰 🖰 🖰 🖰
Word	🖰 🖰 🖰
Miscellaneous	🖰 🖰

Key: 1 🖰 = 20 games

4 **CARS** Kaylee and her sister Kenya were going to visit their grandmother. Each made a guess about the colors of cars they would see along the trip. Kaylee guessed that there would be more red cars than any other color; Kenya guessed there would be more green cars. As they rode, they tallied the number of each color they saw. Who was correct?
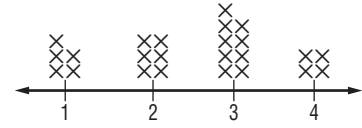
Car Colors	
Color	Number of Cars
Black or Gray	|||
White or Beige	ⅯⅯ	
Red	ⅯⅯⅯ
Blue	Ⅿ	
Green	ⅯⅯ ||||

Lesson 2-2 Practice: Problem Solving

Solve.

1. **GAMES** The line plot shows the result of spinning a spinner 24 times. How many times did the spinner land on the 3?
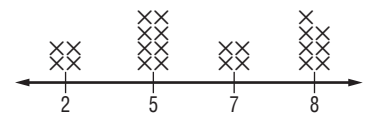
Results of 24 Spins

   _____

2. **CARDS** Ebony had a set of numbered cards. She randomly chose one card at a time from the bag and recorded the results in a tally chart. Display the data in a line graph.

Number	Frequency
1	‖‖
2	卌 卌 ‖
3	‖‖
4	‖‖

3. **SURVEY** Mr. Chavez surveyed baseball fans to determine each fan's favorite player. The line plot shows results according to players' numbers. Which player was chosen the most?
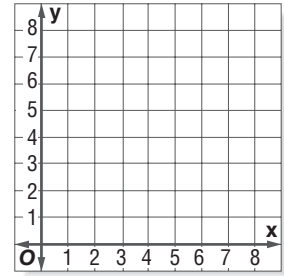
Favorite Players

   _____

4. **CUSTOMERS** A music store recorded the ages of teens who purchased at least one item during the last hour before closing time. The results are shown in the tally chart. Create a line graph to display this data.

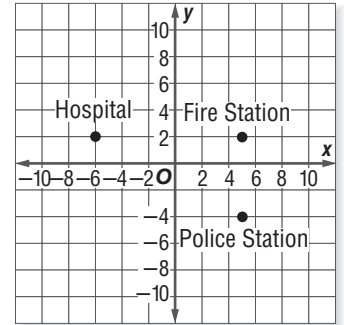| Age	Frequency
14	卌 卌
15	卌 ‖
16	卌
17	‖‖

Lesson 2-3

Practice: Problem Solving

Solve.

1   **CHESS**   Dena is playing chess. She moves her queen from position (8, 3) to position (1, 3). Graph the points. How many spaces did Della move her queen?
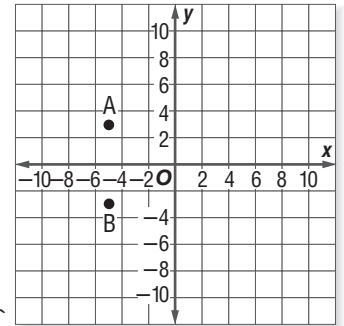
_____

2   **CITIES**   Amanda has a map of her hometown. Each square represents one block. Give the coordinates of the Fire Station and the Police Station. How many blocks separate these buildings?
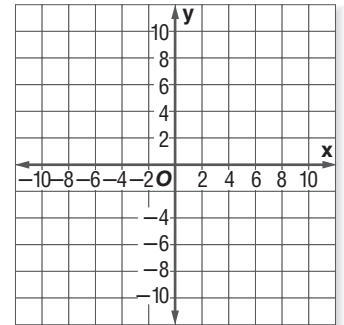
_____

3   **CITIES**   Use the map of Amanda's hometown from Problem 2 above. Give the coordinates of the Hospital and the Fire Station. How many blocks separate these buildings?
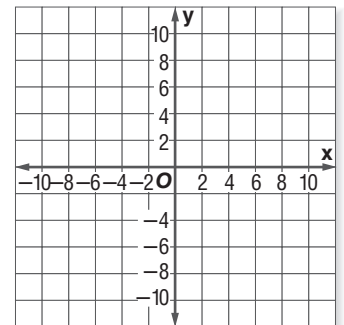
_____

4   **BOARD GAMES**   Blake and Juan are playing a military strategy game on a board which has been marked in a grid pattern. Blake attacked at location A on his first move and location B on his second move. Give the coordinates of each point and the number of spaces between Blake's first and second attacks.

_____

5   **GRAPHING SENSE**   Graph the points (–6, 5) and (9, 5) on the coordinate grid shown. What is the distance between these two points? Explain how this distance could be found without graphing the points?

_____

_____

_____

6   **GRAPHING SENSE**   Graph the points (6, –3) and (6, –10) on the coordinate grid shown. What is the distance between these two points? Explain how this distance could be found without graphing the points?

_____

_____

_____

Chapter 2

Math Triumphs

Lesson 2-4

Practice: Problem Solving

Chapter 2

Solve.

1   RECREATION   A local festival charges $1 per person plus a parking fee of $5 per car. Make an input-output table to show the relationship between number of people and the total amount charged. How much does it cost for 3 people to drive to the festival in one car?

x	x + 5	y	Ordered Pair
1			
2			
3			
4			
5			

2   PIZZA   Meg hosted a party during which she served pizza. Each person at the party ate 2 slices of pizza. Make an input/output table to show the relationship between the number of people at the party and the total amount of pizza. How many slices of pizza were eaten if 4 people attended the party?

x	2x	y	Ordered Pair
1			
2			
3			
4			
5			

3   MOVIES   Edgar would like to take his kids and their friends to the movies. The matinee price for the movie is $3 each. Make an input/output table to show the relationship between the number of tickets and the total cost. How much will the movies cost if Edgar must pay for himself and 4 children?

x	3x	y	Ordered Pair
1			
2			
3			
4			
5			

4   SAVINGS   Evita has $5 in her savings bank. She wants to save $2 a week to buy some CDs. Make an input-output table to show the relationship between the number of weeks and the total amount saved. How much will she save in 10 weeks?

x	2x + 5	y	Ordered Pair
0			
5			
10			
15			
20			

Math Triumphs

Lesson 3-1

Practice: Problem Solving

Solve. Write in simplest form.

1 RUNNING Amanda is training for a marathon. She runs 8 miles each day. How many miles does Amanda run in 4 days?

_____

2 MACHINERY Mr. Diaz needs to order new belts for the machines on his company's production line. Each machine requires 3 belts. There are 7 machines on the production line. How many belts does Mr. Diaz need to order?

_____

3 COOKING Woo baked 12 loaves of bread for his parents' bakery. Each loaf required 3 cups of flour. How many cups of flour did Woo use in all?

_____

4 FOOTBALL At Friday night's game, the home team passed for 3 yards on each down. How many total yards had they gained after the third pass?

_____

5 CELEBRATIONS Every year Ana adds 6 more people to the guest list of her New Year's Eve party. Twenty-three people were on the original guest list for her first party from 2 years ago. How many people will she invite this year?

_____

6 CHEMISTRY Ms. Hawkins set up 7 test tubes for each student in her class. There are 21 students in her fifth-period chemistry class. How many test tubes did Ms. Hawkins set up during fifth period?

_____

7 CONSTRUCTION Patrick is building a fence. He needs two 8-foot sections for each side of the fence. He needs to fence in 3 sides of his property. How many feet of fencing does Patrick need?

_____

8 GOLF Mali has been taking golf lessons. With each week of lessons, her drive increases by 10 yards. Mali's drive was 190 yards the first week. How far did her drive go on the third week? How far did her drive go on the sixth week?

_____

Math Triumphs

Practice: Problem Solving

Solve. Write in simplest form.

1 **TRAVEL** Mato took a car trip to visit his friend. He drove 65 mph for 3 hours. How far did Mato travel?   _____

2 **MASONRY** Luther hired James to build a stone patio. James charges $20 for each hour that he works. It takes James 8 hours to build the patio. How much does Luther owe James?   _____

3 **FITNESS** Marisa burns Calories at a rate of 8 Calories each minute on the exercise bike. How many Calories does Marisa burn after riding the exercise bike for 40 minutes?   _____

4 **PACKAGING** Manu goes to the post office to mail some packages. What is Manu's total cost for sending out 5 identical packages at a cost of $6.75 each?   _____

5 **HOBBIES** Elan estimates that his model rocket travels 150 feet per second. He uses a stopwatch to determine that the rocket is propelled by the engine for 7 seconds. How far did the rocket travel?   _____

6 **PAINTING** It takes Kasa 6 hours to paint a room. How long will it take Kasa to paint 5 rooms?   _____

7 **FOOD SERVICE** Sergio and 3 of his friends went out for lunch. The total bill was $37. If the 4 friends split the bill evenly, how much did Sergio owe?   _____

8 **RETAIL** Sarah bought 3 identical pairs of pants at the mall for a total cost of $150. What was the cost of each pair of pants?   _____

Math Triumphs

Practice: Problem Solving

Solve.

1 **GROCERY** Felipe bought 6 boxes of crackers at the store. They
were on sale for 4 for $5. How much did he spend?
_____

2 **TEMPERATURE** Sarah noticed that it takes 5 minutes for the oven
to heat to 100° Fahrenheit. How long will it take the oven to heat
to 250° Fahrenheit?
_____

3 **RUNNING** Talli runs 4 miles in 28 minutes. How many miles will
Talli run in 42 minutes?
_____

4 **CABINETRY** Kalaya is building cabinets in her kitchen. The plans
she is using instruct her to make 8 drawers for every 2 cabinets.
Kalaya wants to make 3 cabinets. How many drawers does Kalaya
need to make?
_____

5 **HEATING** Ryan uses a 500 Btu/hr heater to heat his 1,000 ft^2
garage. Hakeem has a 1,500 ft^2 garage. What size heater should
Hakeem use?
_____

6 **CONSTRUCTION** Federico used 90 planks of wood to build a
150 ft^2 deck. How many planks of wood will Sergio use to build a
225 ft^2 deck?
_____

7 **COOKING** Andrea is making stew. The recipe states that
2.5 pounds of beef are needed per serving, and one serving feeds
4 people. How much beef will Andrea need to make enough stew
for 28 people?
_____

8 **BIOLOGY** Shristi is studying the growth rate of chickens. In her
last experiment, she set 100 eggs. Out of those, 80 birds hatched.
How many birds can Shristi expect to hatch if she sets 175 eggs?
_____

9 **MARKET RESEARCH** A juice company took a survey to find out if
people prefer orange juice or apple juice. For every 4 people who
picked apple juice, 9 picked orange juice. If 48 people picked
apple juice, how many people selected orange juice?
_____

Lesson 4-1 Practice: Problem Solving

Write a function, make a function table, and make a graph. Solve.

1 **BIOLOGY** During Biology class, Angie learns that spiders and scorpions each have 8 legs. Let $f(y)$ = the number of legs and x = the number of spiders or scorpions.

$f(y) = $ _____

Number of spiders or scorpions, x	4	6	8	10	12
Number of legs, $f(y)$					

How many legs do 12 spiders have?

_____

2 **WAGES** Sergio works for a company that gives a raise every third year of employment. Sergio was 26 years old when he was hired. Let $f(y)$ = Sergio's age and x = the number of raises.

$f(y) = $ _____

Number of raises, x	1	2	3	4	5
Serio's age, $f(y)$					

How old will Sergio be when he gets his fourth raise?

_____

3 **MANAGEMENT** A manager works 1 hour longer each day than his employees. Let $f(y)$ = the number of hours worked by the manager and x = the number of hours worked by the employees.

$f(y) = $ _____

Number of hours worked by employees, x	2	4	6	8	10
Number of hours worked by manager, $f(y)$					

If the employees worked 8 hours one day, how many hours did the manager work?

_____

Chapter 4

Lesson 4-2 **Practice: Problem Solving**

Write a function, make a function table, and make a graph.

1 **GEOMETRY**   Volume is the amount of space an object occupies. The volume of a cube is the cube of the length of a side.

$f(y) =$ _____

Length, x	1	2	3	4	5
Volume, $f(y)$					

What is the volume of a cube with length 4 units? _____

2 **SAVINGS**   Sachi has developed an unusual savings plan. Each day he puts in the number of cents equal to the day cubed plus 5.

$f(y) =$ _____

Day, x	1	2	3	4	5
Savings (in cents), $f(y)$					

How much will Sachi put into savings on the fifth day of his plan? _____

3 **MEMBERSHIP**   Ian joined a gym. The cost of membership is a one-time fee of $50 plus $10 each month.

$f(y) =$ _____

Months, x	2	4	6	8	10
Total Cost, $f(y)$					

How much will Ian spend for 6 months of gym membership? _____

Chapter 4

Lesson 4-3

Practice: Problem Solving

Solve.

1 **TRANSPORTATION**   The graph shows the ratio of miles traveled, y, to gallons of gas used, x. Use the graph to find the slope. Interpret the slope.

The slope is _____ or _____.

In this problem, the slope _____ means that _____ miles are traveled for every _____ gallon of gas.

2 **MONEY**   The graph shows the ratio of quarters, y, to dollars, x. Use the graph to find the slope. Interpret the slope.

The slope is _____ or _____.

In this problem, the slope _____ means that _____ quarters are equivalent to _____ dollar.

3 **BIRDS**   The graph shows the ratio of the number of wings, y, to the number of birds, x. Use the graph to find the slope. Interpret the slope.

The slope is _____ or _____.

In this problem, the slope _____ means that _____ wings are found on every _____ bird.

4 **FRUIT**   The graph shows the ratio of cost, y, to the number of pounds of bananas purchased, x. Use the graph to find the slope. Interpret the slope.
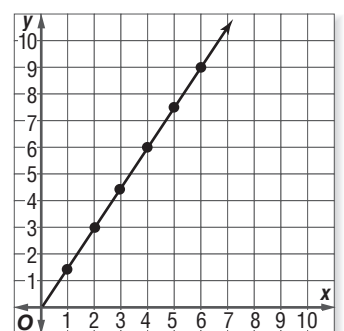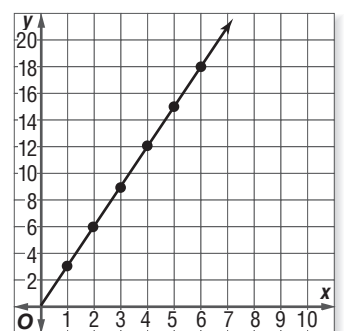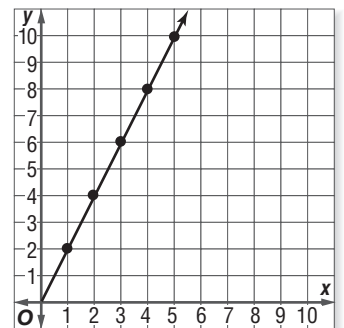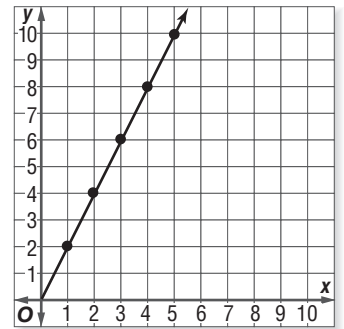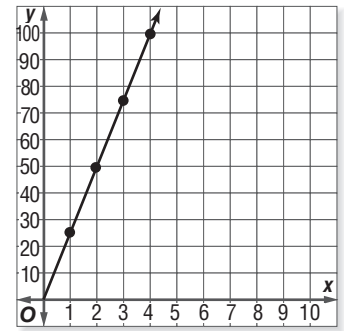
The slope is _____ or _____.

In this problem, the slope _____ means that _____ dollars are used to purchase _____ pound of bananas.

5 **MEASUREMENTS**   The graph shows the ratio of the number feet, y, to the number of yards, x. Use the graph to find the slope. Interpret the slope.

The slope is _____ or _____.

In this problem, the slope _____ means that _____ feet are in every _____ yard.

Chapter 4

Math Triumphs

Lesson 4-4 # Practice: Problem Solving

Solve.

1 **ANIMALS** Graph an equation to represent the data (see picture).

A deer runs at a speed of approximately 30 miles per hour.

Let x represent the number of hours and y represent the number of miles.

The equation is _____. The slope is _____.
The y-intercept is _____.

2 **MONEY** Luis earns $8 per hour.

Let x represent the number of hours and y represent dollars.

The equation is _____. The slope is _____.
The y-intercept is _____.

3 **MILEAGE** Graph an equation to represent the data (see picture).

Let x represent the number of gallons and y represent the number of miles.

The equation is _____. The slope is _____.
The y-intercept is _____.

4 **SCHOOL** To complete a book for literature class, Aiden will read 5 pages every night. Graph an equation to represent the data.

Let x represent the number of nights and y represent the number of pages.

The equation is _____. The slope is _____.
The y-intercept is _____.

5 **BAKING** Julieta is baking cookies to give to her neighbors during the holidays. She bakes 3 batches of cookies every hour. Graph an equation to represent the data.

Let x represent the number of hours and y represent the number of cookie batches.

The equation is _____. The slope is _____.
The y-intercept is _____.

Chapter 4