

Practice with Examples

For use with pages 203–208

GOAL Plot points in a coordinate plane, draw a scatter plot, and make predictions about real-life situations

VOCABULARY

A **coordinate plane** is formed by two real number lines that intersect at a right angle.

Each point in a coordinate plane corresponds to an **ordered pair** of real numbers. The first number is the **x-coordinate** and the second number is the **y-coordinate**.

A **scatter plot** is a graph containing several points that represent real-life data.

EXAMPLE 1 Plotting Points in a Coordinate Plane

Plot and label the following ordered pairs in a coordinate plane.

a. $(3, -2)$

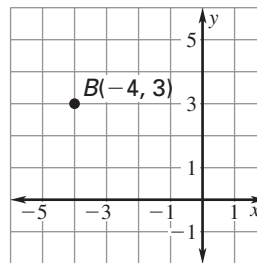
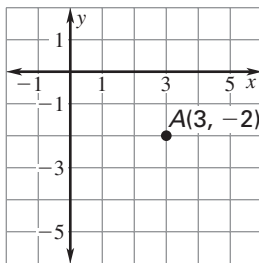
b. $(-4, 3)$

SOLUTION

To plot a point, you move along the horizontal and vertical lines in the coordinate plane and mark the location that corresponds to the ordered pair.

a. To plot the point $(3, -2)$, start at the origin. Move 3 units to the right and 2 units down.

b. To plot the point $(-4, 3)$, start at the origin. Move 4 units to the left and 3 units up.

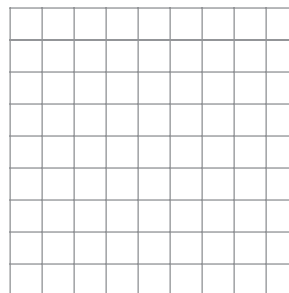
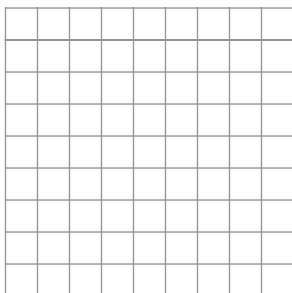


Exercises for Example 1

Plot and label the ordered pairs in a coordinate plane.

1. $A(5, 4)$, $B(-3, 0)$, $C(-1, -2)$

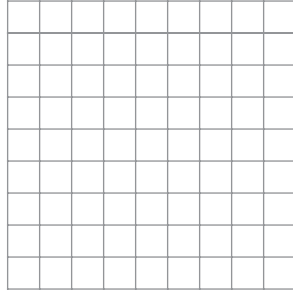
2. $A(-3, 2)$, $B(0, 0)$, $C(2, -2)$



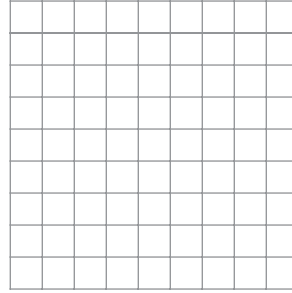
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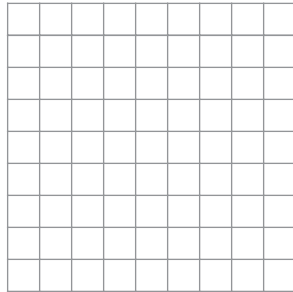
3. $A(0, -4), B(3, 5), C(3, -1)$



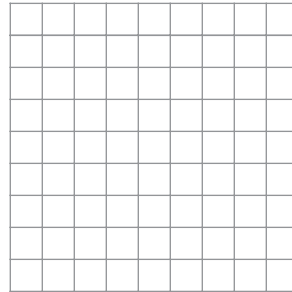
4. $A(-1, -2), B(5, -2), C(-4, 0)$



5. $A(-1, 3), B(2, 0), C(3, -2)$



6. $A(2, 4), B(-2, 5), C(0, 3)$



EXAMPLE 2

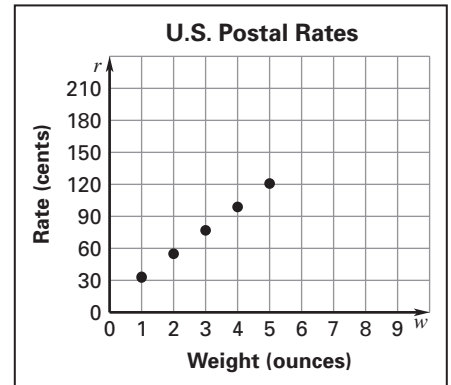
Sketching a Scatter Plot

The table below gives the U.S. postal rates (in cents) for first-class mail, based on the weight (in ounces) of the mail. Draw a scatter plot of the data and predict the postal rate for a piece of mail that weighs 8 ounces.

<i>Weight (ounces)</i>	1	2	3	4	5
<i>Rate (cents)</i>	33	55	77	99	121

SOLUTION

- 1 Rewrite the data in the table as a list of ordered pairs.
 $(1, 33), (2, 55), (3, 77), (4, 99), (5, 121)$
- 2 Draw a coordinate plane. Put weight w on the horizontal axis and rate r on the vertical axis.
- 3 Plot the points.
- 4 From the scatter plot, you can see that the points follow a pattern. By extending the pattern, you can predict that the postal rate for an 8 ounce piece of mail is about 187 cents, or \$1.87.



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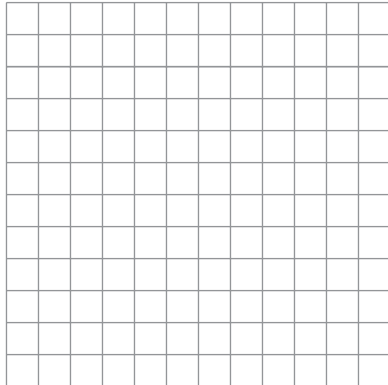
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Exercises for Example 2

In Exercises 7 and 8, make a scatter plot of the data. Use the horizontal axis to represent time.

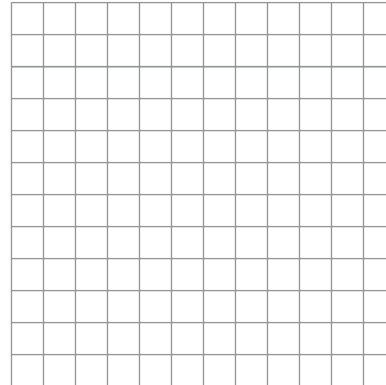
7.

<i>Year</i>	1997	1998	1999	2000
<i>Members</i>	74	81	89	95



8.

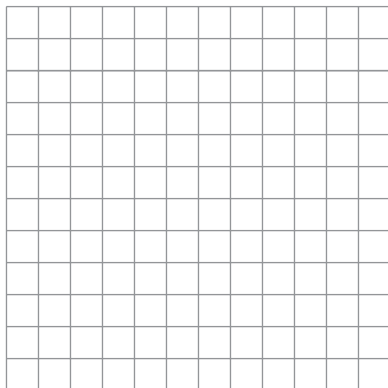
<i>Month</i>	Jan.	Apr.	Aug.	Dec.
<i>Adults</i>	22	30	15	42



In Exercises 9 and 10, use a scatter plot to see if the given information is correct. If not, explain how the data should be changed. Use the horizontal axis to represent quarts in Exercise 9 and hours in Exercise 10.

9.

<i>Quarts</i>	3.0	4.0	5.0	6.0
<i>Gallons</i>	0.75	1.0	1.3	1.5



10.

<i>Hours</i>	3	5	6	8
<i>Rental charge (dollars)</i>	14	20	24	32

