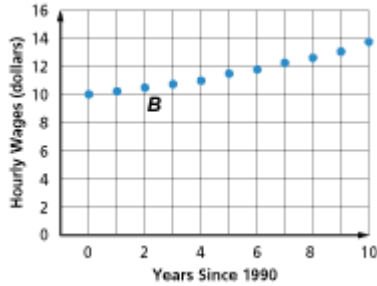


## Lesson 1-8

### Example 1 Identify Coordinates

Refer to the graph below that shows the average hourly wage of U.S. production workers from the years 1990 to 2000. (Production workers include such jobs as construction workers, retail workers, insurance jobs or real estate workers, to name a few.) Name the ordered pair at point B and explain what it represents.



Point B is at 2 along the  $x$ -axis and about 10.5 along the  $y$ -axis. So, its ordered pair is  $(2, 10.5)$ . This represents in 1992 U.S. production workers were making about \$10.50 per hour.

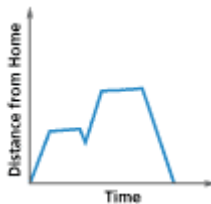
### Example 2 Independent and Dependent Variables

Identify the independent and dependent variables.

- The amount that a spring stretches increases with the amount of weight placed on it.**  
Weight is the independent variable. The amount that the spring stretches is the dependent variable as it is affected by the weight.
- The circumference of a circle decreases as the radius of the circle decreases.**  
The radius is the independent variable. The circumference is the dependent variable as it is affected by the radius.

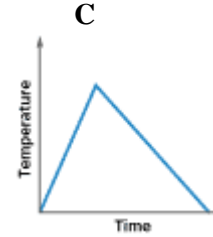
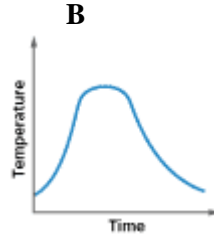
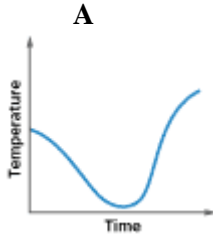
### Example 3 Analyze Graphs

- The graph below represents Eric's distance from home throughout the day. Describe what is happening in the graph.**



At the origin, Eric is at home. He then drives to work at the same speed. He works in the morning, then goes to lunch. He eats lunch at a restaurant between his home and work. After lunch he drives at a constant speed to get to a business meeting that is further from home than his office. He attends the meeting for the afternoon then drives home at a constant speed.

- b. Identify the graph that represents the temperature of a cup of coffee being heated then being set on a counter.



The coffee would heat up slowly at first and then more quickly. It would reach its highest temperature and then begin cooling off fast at first then slowly. Graph B shows this situation.

**Example 4 Draw Graphs**

A pizza place charges \$10 for a medium pizza. They charge \$2 for the first 2 toppings and \$1 for each additional topping over 2.

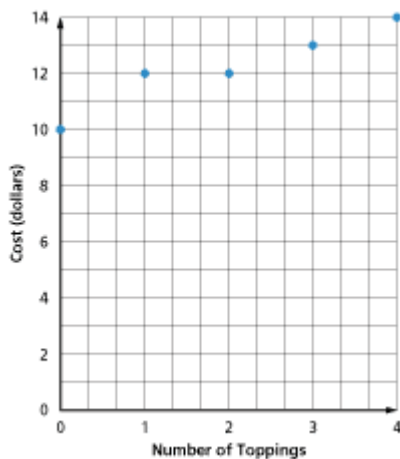
- a. Make a table showing the charge of a medium pizza for 0 to 4 toppings.

<b>Number of Toppings</b>	0	1	2	3	4
<b>Total Cost (\$)</b>	10	12	12	13	14

- b. Write the data as a set of ordered pairs.

The ordered pairs can be determined from the table. The number of toppings is the independent variable, and the total cost is the dependent variable. So, the ordered pairs are (0, 10), (1, 12), (2, 12), (3, 13), and (4, 14).

- c. Draw a graph that shows the relationship between the number of toppings and the total cost.



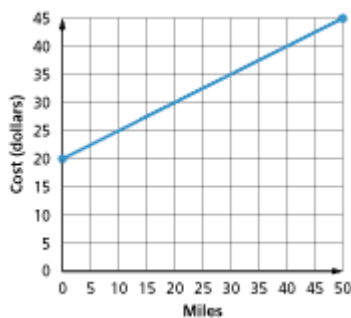
### Example 5 Domain and Range

Lara finds a rental car company charges \$20 plus \$0.50 per mile that you use a car. The charge of the rental car is a function of the number of miles you drive. Suppose Lara will not drive more than 50 miles.

- a. Identify a reasonable domain and range for this situation.

The domain contains the miles driven. Since Lara will not drive more than 50 miles, a reasonable domain would be 0 to 50 miles. The range contains the total cost from \$20 to  $\$20 + \$0.50 \times 50$  or \$45. Thus, a reasonable range is \$20 to \$45.

- b. Draw a graph that shows the relationship between the number of miles driven and the amount charged.



Graph the ordered pairs (0, 20) and (50, 45). Since she will not drive more than 50 miles, connect the two points with a line to include those two points.