

Warm Up:

For the equation $y = x^2 + 3x - x$, complete the table by calculating y for each value of x.

x-value	-2	-1	0	1	2
y-value					

Speak Like A Mathematician:

relation:

domain:

range:

independent variable:

dependent variable:

Example 1: Representations of Relations

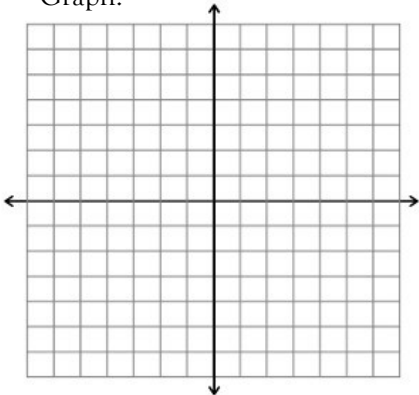
Use $\{(2,0), (0,4), (3,-5), (-3,-5)\}$.

Part A: Express the relation as a table, as a graph, and as a mapping diagram.

Table:

x	y

Graph:



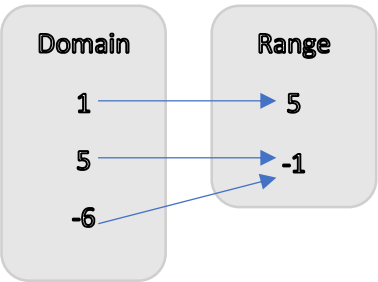
Mapping:



Example 1 Check:

List the ordered pairs in each relation.

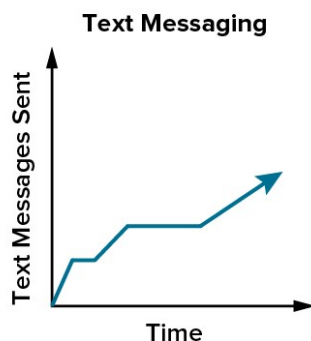
x	y
-1	-5
4	7
-2	3



Example 2: Analyzing Graphs of Relations

The graph represents the number of text messages sent by Nora throughout the day.

Part A: Identify the independent and dependent variables of the relation.



Part B: Describe what happens in the graph.

As you move from left to right along the graph, time _____ and the number of text messages sent _____ until the graph becomes a _____.

The horizontal line means that time is _____, but the number of text messages _____. During this time, Nora _____ sending text messages.

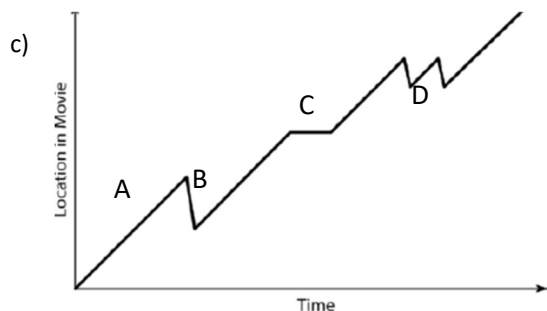
Then she _____ sending text messages until she _____ again for a period of time.

Finally, Nora began _____ text messages again.

Check:

Identify the independent and dependent variables for each relation.

- The average price of a ticket at Kings Island has steadily increased over time.
- Changes in room temperature can influence math test scores.



Your friend calls again and you pause the movie.

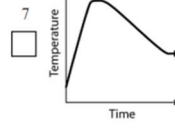
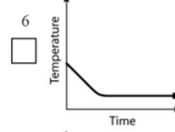
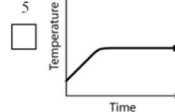
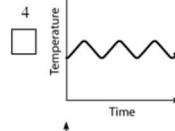
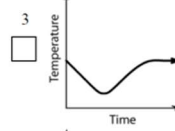
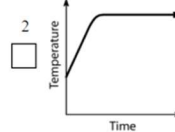
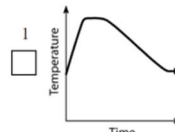
Your friend calls and you miss part so you rewind.

You finish watching your favorite movie.

You begin watching your favorite movie.

You watch your favorite scene three times.

Match each situation with the most appropriate graph. Label the graphs with the events of the situation. There is one graph without a description. After you finish matching the others, write a description for that graph.



a. You put ice in a cup of water and set it on the counter.

b. You take a cup of ice cubes out of the freezer and set it on the counter.

c. You put a cup of water into the freezer.

d. You put a cup of water in the microwave and heat it on high for five minutes.

e. You put a cup of water on the stove and heat it on high.

f. You put a cup of ice water in the microwave and heat it on high for five minutes.

g. _____
