

1. Plot the points  $(2, 4)$ ,  $(-1, 3)$ ,  $(12, -3)$ ,  $(-7, 6)$ ,  $(0, -8)$ ,  $(0, 0)$ ,  $(5, 0)$ ,  $(-3, 0)$ , and  $(0, 9)$ .

2. Complete the given table and sketch a graph of the function.

(a)  $y = 4x - 5$

x	-3	-2	-1	0	1	2	3	4
y								

(b)  $y = 2x^2 - 3$

x	-3	-2	-1	0	1	2	3	4
y								

(c)  $y = \frac{1}{x}$

x	-3	-2	-1	$-\frac{1}{4}$	$-\frac{1}{2}$	0	$\frac{1}{4}$	$\frac{1}{2}$	1	2	3
y											

(d)  $y = 7$

x	-3	-2	-1	0	1	2	3	4
y								

(e)  $y = 2^x$

x	-3	-2	-1	0	1	2	3	4
y								

3.  $C(x)$  is the percentage change in the number of dairy cattle on farms in the United States,  $x$  years after 1985.

- What are the units for the quantity measured on the horizontal axis?
- What are the units for the quantity measured on the vertical axis?
- Can the graph appear to the left of the vertical axis? Explain why or why not.
- Can the graph appear below the horizontal axis? Explain why or why not.
- Can the graph be used to determine the number of dairy cattle on farms in the United States? Explain why or why not.

For each function,

- explain why or why not the graph of the function could appear below the horizontal axis;
- explain why or why not the graph of the function could appear to the left of the vertical axis;
- state the units for the horizontal axis; and
- state the units for the vertical axis.

4.  $G(x)$  is your grade on an exam out of 100 points after  $x$  hours of study.

5.  $C(x)$  is the change in your grade on an exam out of 100 points after  $x$  hours of study.

6.  $P(x)$  is the percentage change in your grade on an exam out of 100 points after  $x$  hours of study.

7.  $R(x)$  is the rate of change of your grade on an exam out of 100 points after  $x$  hours of study.

8.  $N(x)$  is the number of employees at the *Doors International Corporation* when the CEO's annual salary is  $x$  hundred thousand dollars.