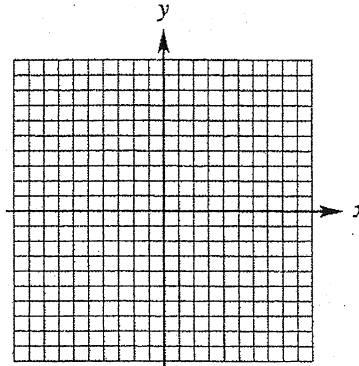


1. Sketch the graph of the quadratic function  $f(x) = -3x^2 - 6x - 5$ . Give the intercepts, the vertex, the axis, the domain, and the range.

1.



x-intercepts: \_\_\_\_\_

y-intercepts: \_\_\_\_\_

vertex: \_\_\_\_\_

axis: \_\_\_\_\_

domain: \_\_\_\_\_

range: \_\_\_\_\_

2. An object is thrown upward from a height of 50 ft with an initial velocity of 48 ft per sec. The height in feet after  $t$  seconds is given by  $h = -16t^2 + 48t + 50$ .
- Find the height of the object 3 sec after it is thrown upward.
  - Find the maximum height of the object and the time it takes the object to reach this height.

2. a. \_\_\_\_\_

b. \_\_\_\_\_

Use synthetic division to perform each division.

3. 
$$\frac{3x^4 + 2x^3 - x^2 + 5x - 6}{x + 2}$$

3.  $q(x)$ : \_\_\_\_\_

$r$ : \_\_\_\_\_

4. 
$$\frac{2x^3 + 4x - 5}{x - 3}$$

4.  $q(x)$ : \_\_\_\_\_

$r$ : \_\_\_\_\_

5. Use synthetic division to determine  $f(2)$ , if  $f(x) = 3x^5 + 4x^4 - 2x^2 + 7x - 13$ .

5. \_\_\_\_\_