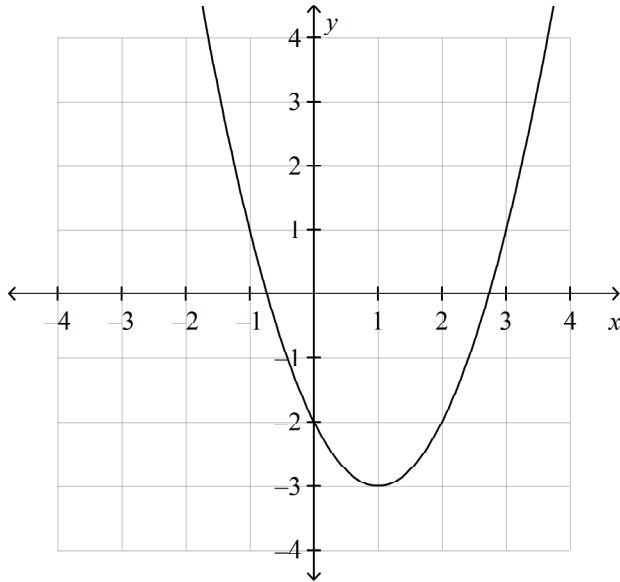


## Chapter 4 Test 1 Review 1

### Multiple Choice

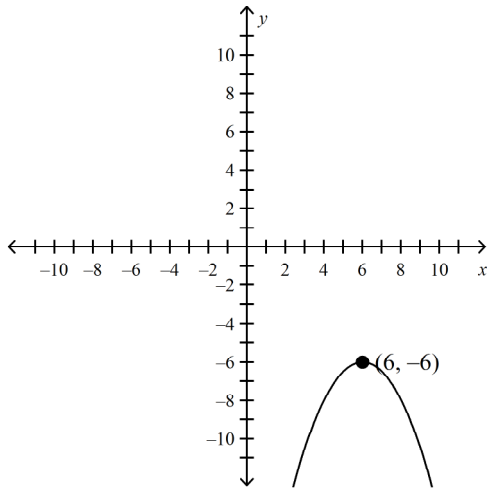
Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Identify the vertex of the graph. Tell whether it is a minimum or maximum.

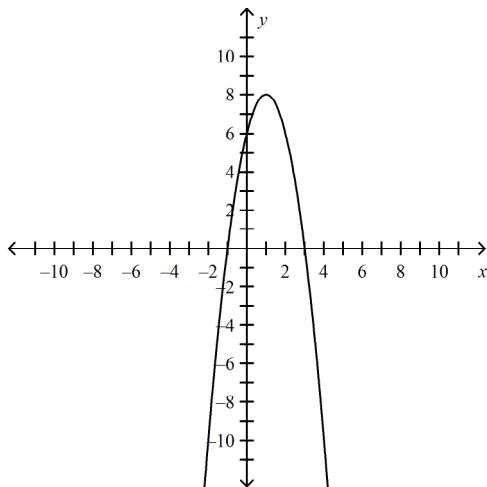


- a.  $(-3, 1)$ ; minimum                      c.  $(1, -3)$ ; minimum  
 b.  $(1, -3)$ ; maximum                      d.  $(-3, 1)$ ; maximum
- \_\_\_\_\_ 2. A parabola \_\_\_\_\_ has an axis of symmetry.  
 a. always                      b. sometimes                      c. never
- \_\_\_\_\_ 3. Find the equation of the axis of symmetry and the coordinates of the vertex of the graph of the function.  
 $y = 4x^2 + 5x - 1$
- a.  $x = \frac{5}{8}$ ; vertex:  $\left(\frac{5}{8}, 4\frac{5}{8}\right)$                       c.  $x = -\frac{5}{8}$ ; vertex:  $\left(-\frac{5}{8}, -5\frac{11}{16}\right)$   
 b.  $x = \frac{5}{8}$ ; vertex:  $\left(\frac{5}{8}, 3\frac{11}{16}\right)$                       d.  $x = -\frac{5}{8}$ ; vertex:  $\left(-\frac{5}{8}, -2\frac{9}{16}\right)$

- \_\_\_\_\_ 4. Identify the vertex of the parabola. Then give the minimum or maximum value of the function.



- a. The vertex is  $(6, -6)$ , and the maximum is  $-6$ .  
 b. The vertex is  $(6, -6)$ , and the maximum is  $6$ .  
 c. The vertex is  $(6, -6)$ , and the minimum is  $-6$ .  
 d. The vertex is  $(6, -6)$ , and the minimum is  $6$ .
- \_\_\_\_\_ 5. Find the zeros of the quadratic function  $f(x) = -2x^2 + 4x + 6$  from the graph.



- a. 6  
 b. 1  
 c.  $-2$  and  $6$   
 d.  $-1$  and  $3$
- \_\_\_\_\_ 6. Find the axis of symmetry of the graph of  $y = x^2 - 2x + 3$ .
- a.  $x = 2$   
 b.  $x = 1$   
 c.  $y = 2$   
 d.  $y = 1$
- \_\_\_\_\_ 7. Simplify  $\sqrt{-216}$  using the imaginary number  $i$ .
- a.  $-6\sqrt{6}$   
 b.  $6i\sqrt{6}$   
 c.  $6\sqrt{-6}$   
 d.  $i\sqrt{216}$

Write the number in the form  $a + bi$ .

- \_\_\_\_\_ 8.  $\sqrt{-49} + 6$   
a.  $49 + 6i$  c.  $6 + 7i$   
b.  $6 + i\sqrt{49}$  d.  $7 + 6i$
- \_\_\_\_\_ 9.  $7 - \sqrt{-32}$   
a.  $-7 + i\sqrt{32}$  c.  $-7 - 4i\sqrt{2}$   
b.  $7 - 4i\sqrt{2}$  d.  $7 + 4i\sqrt{2}$

Simplify the expression.

- \_\_\_\_\_ 10.  $(3 + 6i) + (-3 + 4i)$   
a.  $10i$  c.  $9 + i$   
b.  $0 - 10i$  d.  $0 + 10i$
- \_\_\_\_\_ 11.  $(-3 - 2i) - (-2 - i)$   
a.  $1 + i$  c.  $-5 - 3i$   
b.  $-2i$  d.  $-1 - i$
- \_\_\_\_\_ 12.  $(-5i)(7i)$   
a.  $-35i$  b.  $35i$  c.  $35$  d.  $-35$
- \_\_\_\_\_ 13.  $(-5 + 4i)(5 - 2i)$   
a.  $-17 + 30i$  c.  $-25 - 8i$   
b.  $-33 + 30i$  d.  $-25 + 30i$

### Short Answer

14. Graph  $y = x^2 - 3x + 4$ . Find the axis of symmetry and the vertex.

Factor the expression.

15.  $25b^2 - 9$
16. Factor  $27x^2z + 36xz + 12z$  completely.
17. Determine whether  $25w^4 - 9n^4$  is a difference of two squares. If so, factor it. If not, explain why.
18. Factor  $2x^2 + 13x + 15$ .
19. Factor  $2x^2 + 3x - 5$ .
20. Factor the trinomial  $s^2 + s - 72$ .
21. Factor the trinomial  $z^2 + 14z + 45$ .
22. Describe how you would graph  $f(x) = 2x^2 + 4x - 2$ .

## Chapter 4 Test 1 Review 1

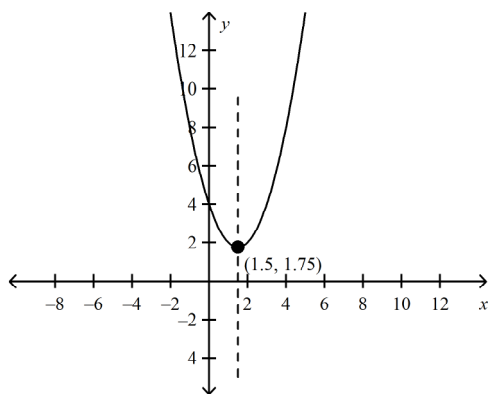
### Answer Section

#### MULTIPLE CHOICE

1. C
2. A
3. D
4. A
5. D
6. B
7. B
8. C
9. B
10. D
11. D
12. C
13. A

#### SHORT ANSWER

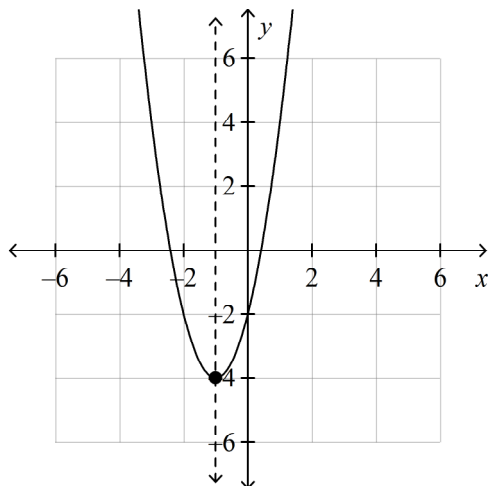
14.



The axis of symmetry is  $x = \frac{3}{2}$ . The vertex is  $\left(\frac{3}{2}, \frac{7}{4}\right)$ .

15.  $(5b + 3)(5b - 3)$
16.  $3z(3x + 2)^2$
17.  $(5w^2 + 3n^2)(5w^2 - 3n^2)$
18.  $(x + 5)(2x + 3)$
19.  $(x - 1)(2x + 5)$
20.  $(s - 8)(s + 9)$
21.  $(z + 9)(z + 5)$

22.

Axis of symmetry:  $x = -1$ Vertex:  $(-1, -4)$