Name: _____ Class: _____ Date: _____ ID: A

Chapter 10 Practice Test

Describe how the graph of the function compares to the graph of $y = x^2$.

1. $y=3x^2$

2. $y=-4x^2$

3. $y=-\frac{1}{6}x^2$

Solve the equation.

4. $x^2=9$

5. $\frac{1}{6}x^2=54$

____ 6. $25x^2-9=0$

a. $-\frac{5}{3},\frac{5}{3}$ b. $-\frac{3}{5},\frac{3}{5}$ c. $-\frac{9}{25},\frac{9}{25}$ d. $-\frac{25}{9},\frac{25}{9}$

7. $z^2+3=-17$

Find the value of c that makes the expression a perfect square trinomial.

8. $x^2+18x+c$

Solve the equation by completing the square.

____ 9. $x^2+6x-16=0$

a. 8, 2 b. –8, 2 c. –8, –2 d. 8, –2

10. $r^2-4r-7=0$

____ 11. $3x^2-2x-5=0$

a. $\frac{7}{3},-3$ b. $3,-\frac{7}{3}$ c. $1,-\frac{5}{3}$ d. $\frac{5}{3},-1$

Use the quadratic formula to solve the equation. Round your solution to the nearest hundredth, if necessary.

12. $x^2-x=2$

13. $2x^2 - x = 1$

Use the quadratic formula to solve the equation.

____ 14. $x^2 = 5x - 2$

a. $-5 + \sqrt{17}, -5 - \sqrt{17}$

b. $\frac{5 + \sqrt{17}}{2}, \frac{5 - \sqrt{17}}{2}$

c. $5 + \sqrt{17}, 5 - \sqrt{17}$

d. $\frac{5 + \sqrt{17}}{2}, \frac{-5 - \sqrt{17}}{2}$

Find the discriminant:

15. $2x^2 + 6x + 2 = 0$

Determine the number of solutions of the equation.

16. $-x^2 - 4x = -3$

____ 17. $-x^2 - 4x + 3 = 0$

a. 3 b. 0 c. 1 d. 2

18. $x^2 + x + 1 = 0$

19. Find the coordinates of the vertex and determine whether the graph opens *up* or *down*. $y = -x^2 + x - 5$

Find the *vertex* and the *axis of symmetry* of the parabola.

20. $y = -3x^2 + 12x - 8$

21. $y = 3x^2 + 12x + 9$

Chapter 10 Practice Test
Answer Section

1. ANS:
The graph is narrower than that of $y = x^2$, passing through $(1, 3)$ rather than $(1, 1)$.

BNK: 10.1 Graph y = ax2 + c

2. ANS:
The graph opens downward rather than upward and is narrower than that of $y = x^2$, passing through (1, –4) rather than (1, 1).

BNK: 10.1 Graph y = ax2 + c

3. ANS:
The graph opens downward rather than upward and is wider than that of $y = x^2$, passing through (6, –6) rather than (6, 36).

BNK: 10.1 Graph y = ax2 + c

4. ANS:
–3, 3

BNK: 10.4 Use Square Roots to Solve Quadratic Equations

5. ANS:
18, –18

BNK: 10.4 Use Square Roots to Solve Quadratic Equations

6. ANS: B BNK: 10.4 Use Square Roots to Solve Quadratic Equations

7. ANS:
no real solution

BNK: 10.4 Use Square Roots to Solve Quadratic Equations

8. ANS:
81

BNK: 10.5 Solve Quadratic Equations by Completing the Square

9. ANS: B BNK: 10.5 Solve Quadratic Equations by Completing the Square

10. ANS:
$2+\sqrt{11},\ 2-\sqrt{11}$

BNK: 10.5 Solve Quadratic Equations by Completing the Square

11. ANS: D BNK: 10.5 Solve Quadratic Equations by Completing the Square

12. ANS:
2, –1

BNK: 10.6 Solve Quadratic Equations by the Quadratic Formula

13. ANS:
$1, -\frac{1}{2}$

BNK: 10.6 Solve Quadratic Equations by the Quadratic Formula
14. ANS: B BNK: 10.6 Solve Quadratic Equations by the Quadratic Formula
15. ANS:
20

BNK: 10.7 Interpret the Discriminant
16. ANS:
2

BNK: 10.7 Interpret the Discriminant
17. ANS: D BNK: 10.7 Interpret the Discriminant
18. ANS:
None

BNK: 10.7 Interpret the Discriminant
19. ANS:
Vertex: $\left(\frac{1}{2}, -\frac{19}{4}\right)$; opens down

BNK: 10.2 Graph y = ax^2 + bx + c
20. ANS:
Vertex: (2, 4); Axis: $x = 2$

BNK: 10.2 Graph y = ax^2 + bx + c
21. ANS:
Vertex: (–2, –3); Axis: $x = -2$

BNK: 10.2 Graph y = ax^2 + bx + c