

Name _____

MULTIPLE CHOICE. Choose the one alternative that best answers the question.**Solve.**

1) $\sqrt{p-1} - 4 = 3$

1) _____

A) {26}

B) \emptyset

C) {2}

D) {50}

2) $\sqrt{4x-19} + 4 = 3$

2) _____

A) {5}

B) {17}

C) \emptyset

D) {5, 17}

3) $\sqrt{3x+16} + 6 = 8$

3) _____

A) {-4}

B) {60}

C) $\left\{ \frac{-16 - \sqrt{2}}{3}, \frac{-16 + \sqrt{2}}{3} \right\}$

D) \emptyset

4) $m = \sqrt{19m+30} - 6$

4) _____

A) {1, 6}

B) {1}

C) \emptyset

D) {6}

5) $z - 1 = \sqrt{31 - z}$

5) _____

A) \emptyset

B) $\{-5\}$

C) $\{6\}$

D) $\{-5, 6\}$

6) $\sqrt[3]{3t - 70} + 6 = 2$

6) _____

A) \emptyset

B) $\left\{ \frac{\sqrt[3]{-4} + 70}{3} \right\}$

C) $\{2\}$

D) $\left\{ \frac{134}{3} \right\}$

7) $\sqrt[3]{u} + 2 = 0$

7) _____

A) $\{8\}$

B) \emptyset

C) $\{-8\}$

D) $\{-\sqrt[3]{2}\}$

Simplify the expression in terms of i .

8) $\sqrt{-4}$

8) _____

A) $i\sqrt{2}$

B) $4i$

C) $-2i$

D) $2i$

9) $\sqrt{-72}$

9) _____

A) $36i\sqrt{2}$

B) $-6i\sqrt{2}$

C) $6\sqrt{2}i$

D) $6i\sqrt{2}$

Simplify completely.

10) $\sqrt{-100} \cdot \sqrt{-3}$

10) _____

A) -30

B) $-10\sqrt{3}$

C) $10\sqrt{3}$

D) $10\sqrt{-3}$

Perform the indicated operations. Write the answer in the form $a + bi$.

11) $(-13 - 4i) + (14 + 6i)$

11) _____

A) $27 + 10i$

B) 3

C) $3i$

D) $1 + 2i$

12) $(-4 + 7i) - (11 - 19i)$

12) _____

A) -41

B) $3 - 30i$

C) $-15 + 26i$

D) $-15 - 12i$

13) $16i - (-2 - 3i) + (-1 - 2i)$

13) _____

A) $17 + 1i$

B) $-3 + 11i$

C) $13 - 5i$

D) $1 + 17i$

14) $(-1 - 4i)(3 - 2i)$

14) _____

A) $-3 - 10i - 8i^2$

B) $-3 - 10i + 8i^2$

C) $5 - 10i$

D) $-11 - 10i$

Simplify the complex number. Write the answer in the form $a + bi$.

15) $\frac{6}{5 - 4i}$

15) _____

A) $\frac{30}{41} - \frac{24}{41}i$

B) $\frac{30}{41} + \frac{24}{41}i$

C) $30 + 24i$

D) $30 - 24i$

16) $\frac{3 - i}{2 + i}$

16) _____

A) $\frac{5}{4} - \frac{5}{4}i$

B) $\frac{3}{2} - i$

C) $1 - i$

D) $-\frac{3}{2}$

Use the distance formula to find the distance between the two points.

17) $(-6, 0)$ and $(-10, 8)$

17) _____

A) $2\sqrt{3}$

B) $4\sqrt{5}$

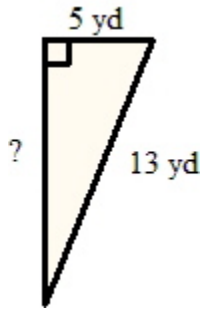
C) 80

D) 12

Solve the problem.

18) Find the length of the third side of the triangle by using the Pythagorean theorem.

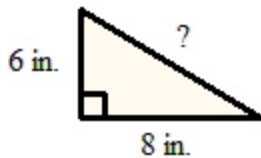
18) _____



- A) 7 yards B) $\sqrt{194}$ yards C) 10 yards D) 12 yards

19) Find the length of the third side of the triangle by using the Pythagorean theorem.

19) _____



- A) 14 in. B) 10 in. C) 12 in. D) 28 in.

Solve using the quadratic formula.

20) $m^2 + 7m - 2 = 0$

20) _____

- A) $\left\{ -\frac{7}{2} - i\frac{\sqrt{41}}{2}, -\frac{7}{2} + i\frac{\sqrt{41}}{2} \right\}$
C) $\left\{ \frac{-7 - \sqrt{41}}{2}, \frac{-7 + \sqrt{41}}{2} \right\}$

- B) $\left\{ -7 - \frac{\sqrt{57}}{2}, -7 + \frac{\sqrt{57}}{2} \right\}$
D) $\left\{ \frac{-7 - \sqrt{57}}{2}, \frac{-7 + \sqrt{57}}{2} \right\}$

21) $13 + 6z = -z^2$

21) _____

A) $\{-6 - 2i, -6 + 2i\}$

B) $\{-5, -1\}$

C) $\{3 - \sqrt{22}, 3 + \sqrt{22}\}$

D) $\{-3 - 2i, -3 + 2i\}$

22) $n(2n + 2) = -11$

22) _____

A) $\left\{-\frac{1}{2} - \frac{\sqrt{21}}{2}i, -\frac{1}{2} + \frac{\sqrt{21}}{2}i\right\}$

B) $\left\{\frac{-1 - \sqrt{21}}{2}, \frac{-1 + \sqrt{21}}{2}\right\}$

C) $\left\{-11, -\frac{13}{2}\right\}$

D) $\left\{\frac{-1 - \sqrt{23}}{2}, \frac{-1 + \sqrt{23}}{2}\right\}$

23) $t^2 - 2t - 12 = 0$

23) _____

A) $\{1 - \sqrt{13}, 1 + \sqrt{13}\}$

B) $\{1 - \sqrt{11}, 1 + \sqrt{11}\}$

C) $\{-1 - i\sqrt{11}, -1 + i\sqrt{11}\}$

D) $\{-1 - \sqrt{13}, -1 + \sqrt{13}\}$

Find the value of the discriminant. Then, determine the number and type of solutions of the equation. Do not solve.

24) $13x^2 + 12x = 1$

24) _____

A) 92; two irrational solutions

B) 92; two complex solutions of the form $a + bi$ and $a - bi$ where a is not a 0

C) 196; two rational solutions

D) 196; one rational solution

25) $3x^2 + 4x + 3 = 0$

25) _____

- A) One rational solution
- C) Two imaginary solutions

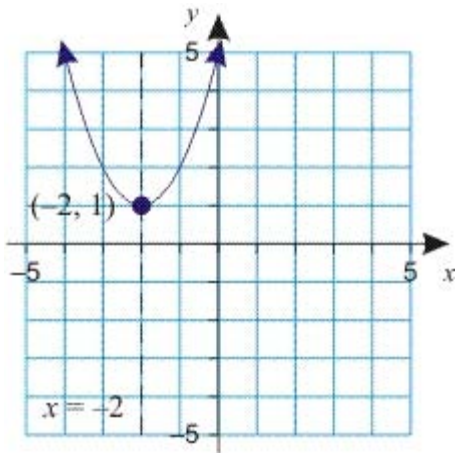
- B) Two irrational solutions
- D) Two rational solutions

Use the equation of the parabola in standard form $y = a(x - h)^2 + k$ to determine the coordinates of the vertex and the equation of the axis of symmetry. Then graph the parabola.

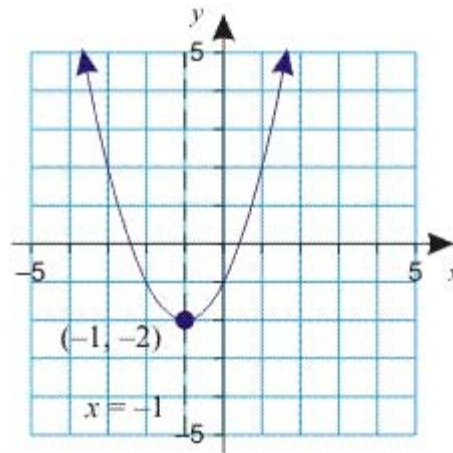
26) $y = (x + 2)^2 + 1$

26) _____

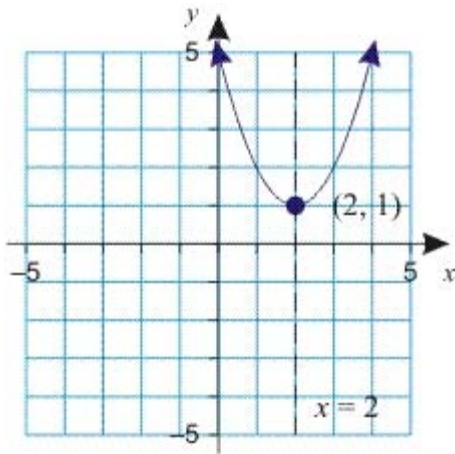
A)



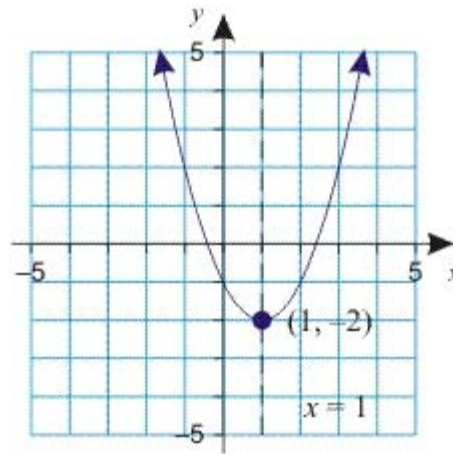
B)



C)



D)

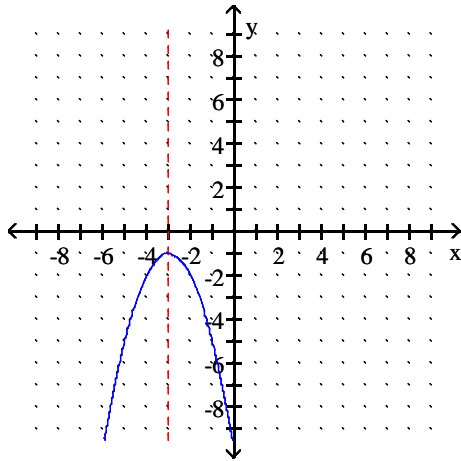


Graph the parabola and the axis of symmetry. Label the coordinates of the vertex, and write the equation of the axis of symmetry.

27) $y = -(x + 3)^2 + 1$

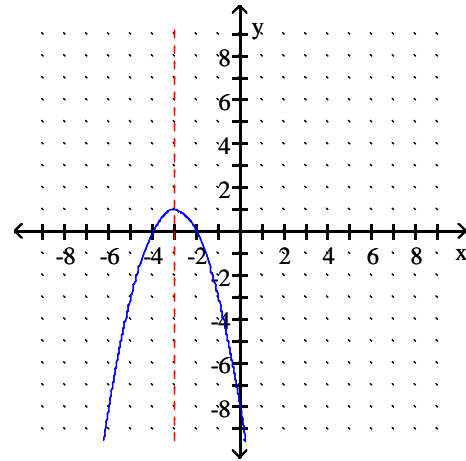
27) _____

A)



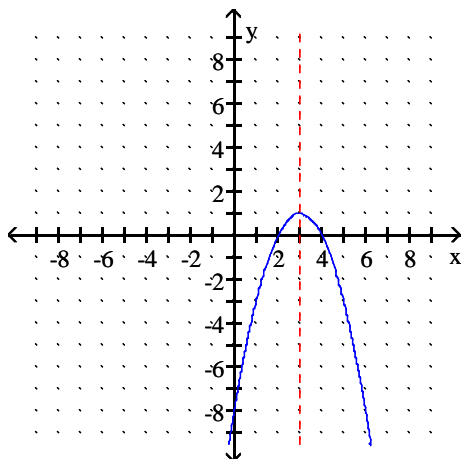
Vertex $(-3, -1)$
axis of symmetry: $x = -3$

B)



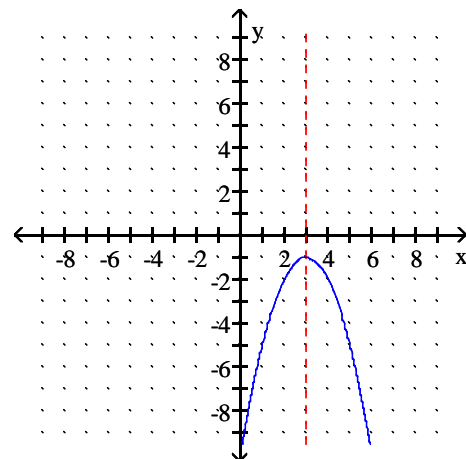
Vertex $(-3, 1)$
axis of symmetry: $x = -3$

C)



Vertex $(3, 1)$
axis of symmetry: $x = 3$

D)



Vertex $(3, -1)$
axis of symmetry: $x = 3$

Identify the vertex, axis of symmetry, and intercepts for the graph of the function.

28) $y = x^2 + 4x + 1$

28) _____

- A) Vertex at $(-2, -3)$; axis: $x = -2$; x -intercepts: $(-2 - \sqrt{3}, 0)$ and $(-2 + \sqrt{3}, 0)$; y -intercept: $(0, 1)$
- B) Vertex at $(-2, -3)$; axis: $y = -3$; x -intercepts: none; y -intercept: $(-2 - \sqrt{3}, 0)$
- C) Vertex at $(2, 13)$; axis: $y = 13$; x -intercepts: $(-2 - \sqrt{3}, 0)$ and $(-2 + \sqrt{3}, 0)$; y -intercept: $(0, 1)$
- D) Vertex at $(2, 13)$; axis: $x = 2$; x -intercepts: none; y -intercept: $(-2 + \sqrt{3}, 0)$

29) $g(x) = x^2 - 1$

29) _____

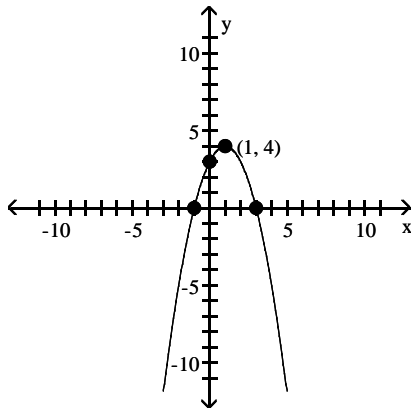
- A) Vertex at $(0, -1)$; axis: $x = 0$; x -intercepts: $(-1, 0)$ and $(1, 0)$; y -intercept: $(0, -1)$
- B) Vertex at $(0, -1)$; axis: $y = -1$; x -intercepts: none; y -intercept: $(0, 1)$
- C) Vertex at $(1, 0)$; axis: $y = -1$; x -intercepts: $(-1, 0)$ and $(1, 0)$; y -intercept: $(0, -1)$
- D) Vertex at $(1, 0)$; axis: $x = 0$; x -intercepts: none; y -intercept: $(0, 1)$

Match the function with its graph.

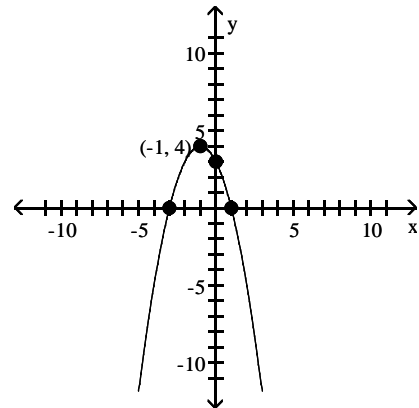
30) $f(x) = -x^2 - 2x + 3$

30) _____

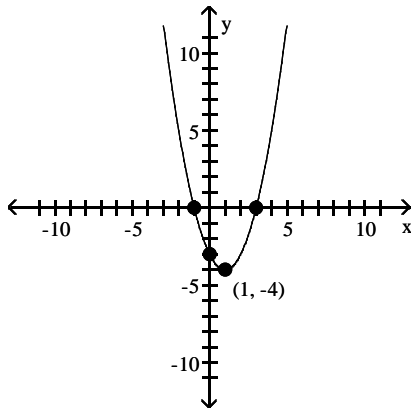
A)



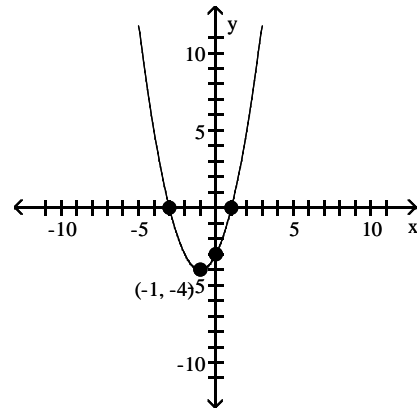
B)



C)



D)



Answer Key

Testname: MATH-0362 TEST 5 REVIEW

- 1) D
- 2) C
- 3) A
- 4) A
- 5) C
- 6) C
- 7) C
- 8) D
- 9) D
- 10) B
- 11) D
- 12) C
- 13) D
- 14) D
- 15) B
- 16) C
- 17) B
- 18) D
- 19) B
- 20) D
- 21) D
- 22) A
- 23) A
- 24) C
- 25) C
- 26) A
- 27) B
- 28) A
- 29) A
- 30) B