Chapter 11 TECM 119 Practice Test

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

Determine whether or not the equation is quadratic.

1) $x^2 + 7 = -2x$ 1) _____

A) Not quadratic. B) Quadratic.

2) $x^2 = (x + 9)^2$ 2) _____

A) Quadratic. B) Not quadratic.

Identify a, b, c, with $a > 0$, for the quadratic equation.

3) $6x^2 = 4 - x$ 3) _____

A) $a = 6, b = 0, c = -4$ B) $a = 6, b = -1, c = 4$

C) $a = 6, b = 1, c = -4$ D) Not quadratic

Test the given values to determine which, if any, are solutions of the equation.

4) $3m^2 - 12m = 0$, $m = 0$, $m = -2$, and $m = 4$ 4) _____

A) -2, 4 B) 0, 4 C) 0, -2 D) -2

Solve the quadratic equation by factoring.

5) $x^2 - x = 6$ 5) _____

A) -2, -3 B) -2, 3 C) 2, 3 D) 1, 6

6) $64k^2 - 25 = 0$ 6) _____

A) $\frac{5}{8}, -\frac{5}{8}$ B) $\frac{8}{5}, -\frac{8}{5}$ C) $\frac{8}{5}, 0$ D) 5, 0

7) $8m^2 - 9m = 0$ 7) _____

A) $-\frac{9}{8}, 0$ B) $\frac{9}{8}, 0$ C) $\frac{9}{8}, -\frac{9}{8}$ D) 0

Solve the problem.

8) Within a group of n people, the number of possible handshakes, N, is given by $N = \frac{1}{2}(n^2 - n)$. At a party, everybody shakes hands with every other person. If the total number of handshakes is 190, how many people are at the party? 8) _____

A) 22 B) 19 C) 21 D) 20

Solve the quadratic equation by completing the square.

9) $a^2 + 14a + 13 = 0$ 9) _____

A) $\sqrt{13}, -\sqrt{13}$ B) -1, -13 C) 1, 13 D) 26, -13

10) $a^2 + 10a + 9 = 0$ 10) _____

A) 18, -9 B) $\sqrt{9}, -\sqrt{9}$ C) -1, -9 D) 1, 9

Solve the problem.

11) The voltage V across a semiconductor in a computer is given by $V = aI + bI^2$, where I is the current (in amperes). If a 9-volt battery is connected across the semiconductor, find the current if a = 6 and b = 3. 11) _____

A) I = 1 ampere
B) I = -3 amperes
C) I = 3 amperes
D) Not enough information

Solve.

12) $4x^2 - 5x = -7$ 12) _____

A) $\frac{5 \pm \sqrt{87}}{8}$ B) $\frac{-5 \pm \sqrt{87}}{8}$ C) $\frac{5 \pm j\sqrt{87}}{8}$ D) $\frac{-5 \pm j\sqrt{87}}{8}$

Solve the problem.

13) The position of an object moving in a straight line is given by $s = 2t^2 - 3t$, where s is the distance in meters and t is the time in seconds the object has been in motion. How long (to the nearest tenth) will it take the object to move 15 meters? 13) _____

A) 3.4 sec B) 40.5 sec C) 3.6 sec D) 16.0 sec

14) The product of two consecutive integers is 19 more than their sum. Find the integers. 14) _____

A) 5, 6 or -4, -3 B) 5, 6 C) 4, 5 or -4, -3 D) -4, -3

15) A number is 42 less than its square. Find all such numbers. 15) _____

A) -7 and 7 B) -7 and 6 C) -6 and 7 D) -6 and 6

Determine if the graph of the parabola will open up or down. Indicate whether the vertex of the graph will be a maximum point or a minimum point.

16) $y = x^2 - 8x + 18$ 16) _____

A) opens up, minimum
B) opens up, maximum
C) opens down, minimum
D) opens down, maximum

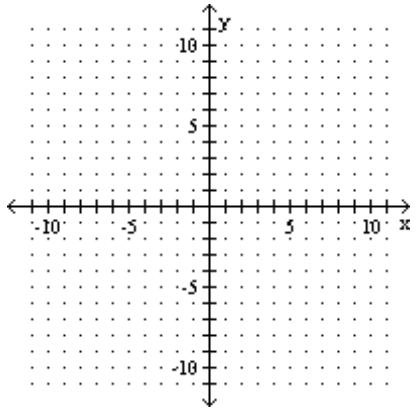
Find the x- and y-intercepts. If no x-intercepts exist, state so.

17) $y = x^2 + 16x + 64$ 17) _____

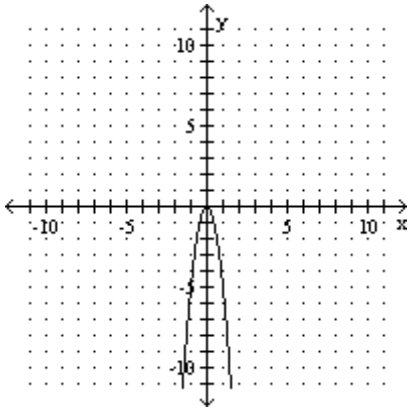
A) (-8, 0), (0, 64) B) (8, 0), (0, 64) C) (64, 0), (0, -8) D) (64, 0), (0, 8)

Graph the parabola.

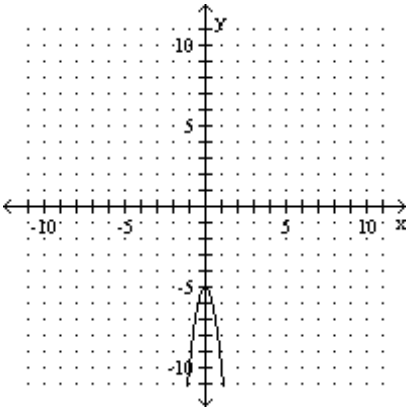
18) $y = -5x^2$ 18) _____



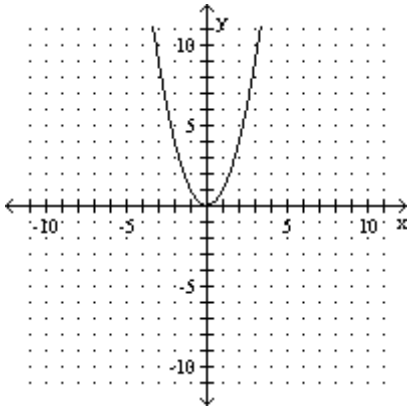
A)


y
10
5
-10
-5
5
10
x
-5
-10

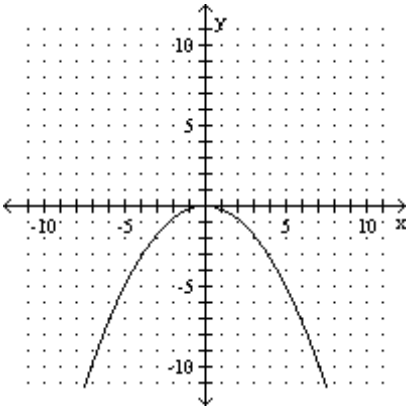
B)


y
10
5
-10
-5
5
10
x
-5
-10

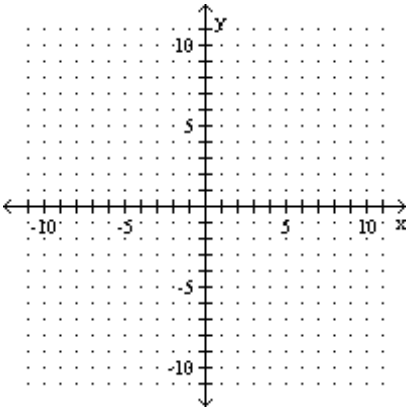
C)


y
10
5
-10
-5
5
10
x
-5
-10

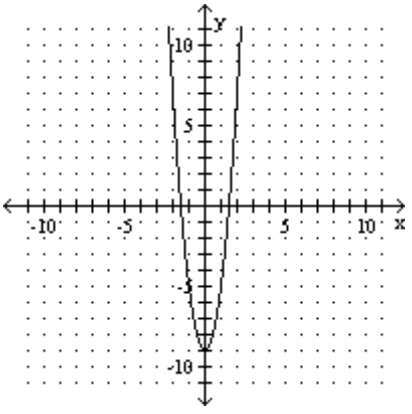
D)


y
10
5
-10
-5
5
10
x
-5
-10

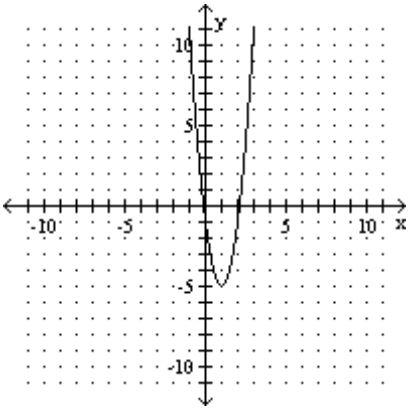
19) $y = 4x^2 - 8x - 1$ 19) _____



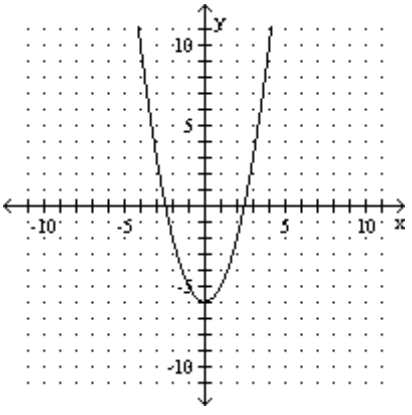
A)



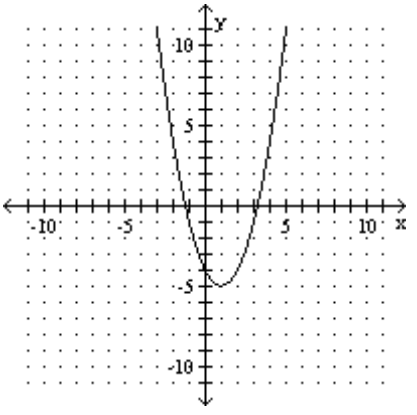
B)



C)



D)



Solve the problem.

20) A ball is thrown downward from a window in a tall building. Its position at time t in seconds is $s = 16t^2 + 32t$, where s is in feet below the window. How long (to the nearest tenth) will it take the ball to fall 213 feet? 20) _____

A) 3.6 sec B) 2.8 sec C) 2.6 sec D) 7.8 sec

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Answer Key

1) B
2) B
3) C
4) B
5) B
6) A
7) B
8) D
9) B
10) C
11) A
12) C
13) C
14) A
15) C
16) A
17) A
18) A
19) B
20) B