1. Solve: $x^2 = -x + 30$

   A. x = -6, -5
   B. x = -6, 5
   C. x = -5, 6
   D. x = 5, 6

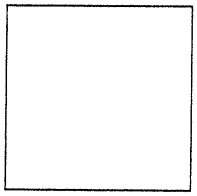
2. Solve: $(x+3)^2 = 36$

   A. x = 3
   B. x = 9
   C. x = -9, 3
   D. x = 3, 9

3. Solve: $2x^2 - 4x - 3 = 0$

   A. $x = 1 \pm 2\sqrt{10}$
   B. $x = 2 \pm \sqrt{10}$
   C. $x = \frac{2 \pm \sqrt{10}}{2}$
   D. $x = \frac{2 \pm \sqrt{2}}{2}$

4. Consider the square below.



(x – 3) units

What is the value of x if the area of the square is126.5625 square units?

A. 8.25
B. 11.25
C. 14.25
D. 17.25

5. The graph of which function has x-intercepts (-4, 0) and (7, 0)?

A. y = (x – 4) (x + 7)
B. y = (x + 4) (x – 7)
C. y = (x + 4) (x + 7)
D. y = (x – 4) (x – 7)

6. What are the zeros of the function $y = x^2 - x - 20$?

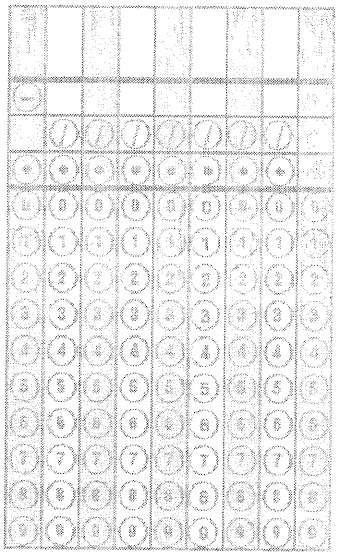
A. -5 and -4
B. -5 and 4
C. -4 and 5
D. 4 and 5

7. What are the x-intercepts of the graph of $y = 2x^2 + x - 10$?

A. (-5, 0) and (2, 0)
B. (-2, 0) and (5, 0)
C. (-2, 0) and (2.5, 0)
D. (2, 0) and (-2.5, 0)

8. What is the solution of $x^2 - 16x = -64$?

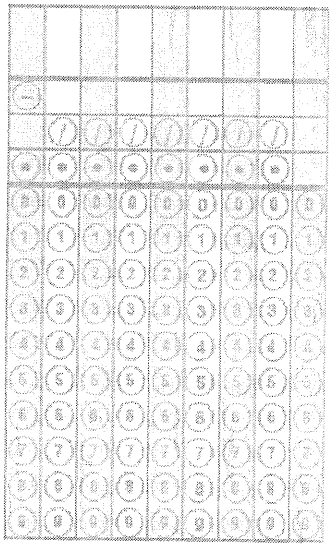
   Enter your answer in the response grid.



9. The height (h) of a stone, in meters, thrown into the air can be modeled by the equation $h = -4.9t^2 + 20t + 10$, where t represents time in seconds.

   How many seconds will it take for the stone to hit the ground $(h = 0)$ after it is thrown into the air? Round your answer to the tenths place.

   Enter your answer in the response grid.



10. A rectangular dance floor measures 24 feet by 32 feet. The length and width of the floor will both be increased by x feet.

Write an equation that can be used to determine the value of x, in feet, if the area of the new dance floor is 1,174.25 square feet.

Answer_____

What are the dimensions of the new dance floor, in feet, if the area is 1,174.25 square feet?

Answer_____

What is the perimeter of the new dance floor, in feet, if the area is 1,174.25 square feet?

Answer_____

11. Solve $\sqrt{2x+3} = x$.

A. $x = -3$
B. $x = 1$
C. $x = 3$
D. $x = -1, 3$

12. The height (h) of a certain insect, in feet, that jumps straight up into the air is modeled by the equation $h = -16t^2 + vt$, where t is the time in seconds after the insect jumps, and v is the initial upward velocity of the insect.

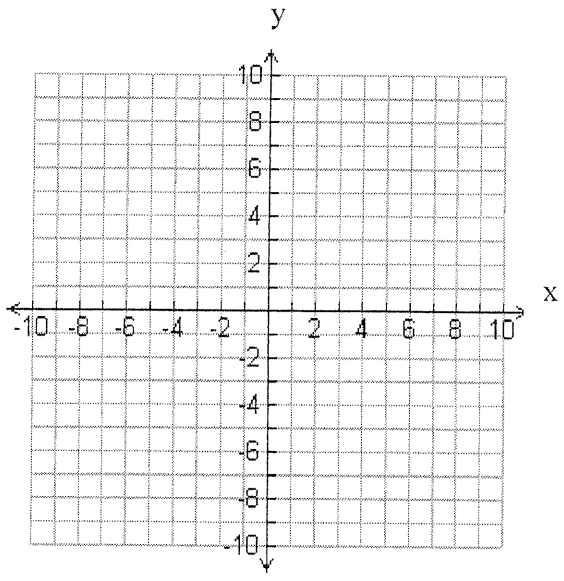
Write an equation that can be used to find the height (h) of the insect, in feet, after t seconds, if the insect's initial upward velocity is 4 feet per second.

Answer_____

How long, in seconds, will it take for the insect to hit the ground after it jumps?

Answer_____

13. Graph $y = x^2 + 4x - 3$.



14. Graph $y = -2x^2 + 8x$.