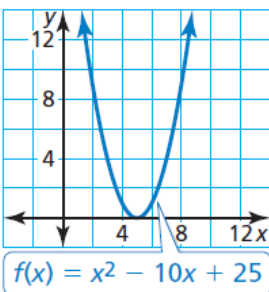
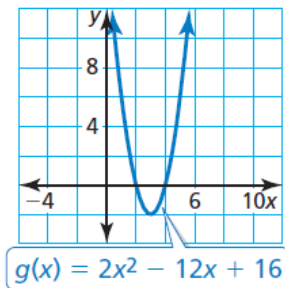


Solve the equation by using the graph. Check your solution(s). (Section 3.1)

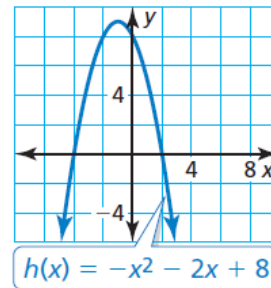
1. $x^2 - 10x + 25 = 0$



2. $2x^2 + 16 = 12x$



3. $x^2 = -2x + 8$



Solve the equation using square roots or by factoring. (Section 3.1)

4. $2x^2 - 15 = 0$

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

6. $(x + 3)^2 = 8$

Perform the operation. Write your answer in standard form. (Section 3.2)

7. $(2 + 5i) + (-4 + 3i)$

8. $(3 + 9i) - (1 - 7i)$

9. $(2 + 4i)(-3 - 5i)$

10. Find the zeros of the function $f(x) = 9x^2 + 2$. Does the graph of the function intersect the x -axis? Explain your reasoning. (Section 3.2)

Solve the equation by completing the square. (Section 3.3)

11. $x^2 - 6x + 10 = 0$

12. $x^2 + 12x + 4 = 0$

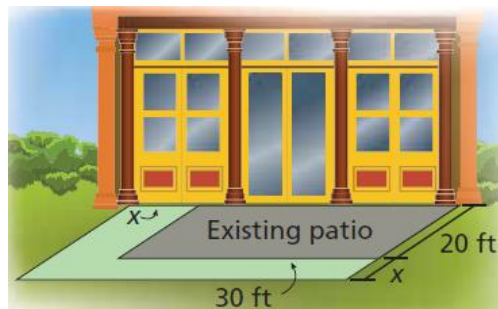
13. Write $y = x^2 - 10x + 4$ in vertex form. Then identify the vertex. (*Section 3.3*)

14. A museum has a café with a rectangular patio. The museum wants to add 464 square feet to the area of the patio by expanding the existing patio as shown. (*Section 3.1*)

a. Find the area of the existing patio.

b. Write an equation to model the area of the new patio.

c. By what distance x should the length of the patio be expanded?



15. The height h (in feet) of a badminton birdie t seconds after it is hit can be modeled by the function $h = -16t^2 + 32t + 4$. (*Section 3.3*)

a. Find the maximum height of the birdie.

b. How long is the birdie in the air?