23. Find the x-intercepts of \( f(x) = 25x^2 + 30x + 9 \).

27. Find the value of the discriminant and decide how many x-intercepts there are.
   (a) \( y = x^2 + 4x + 3 \)  
   (b) \( y = x^2 - 4x + 4 \)  
   (c) \( y = 2x^2 - 4x + 5 \)

32. Find the maximum value of the quadratic function \( f(x) = -\frac{1}{2}x^2 + x + 2 \). At which value \( x \) does \( f \) achieve this maximum?

33. Suppose that 60 meters of fencing is available to enclose a rectangular garden, one side of which will be against the side of a house. What dimensions of the garden will guarantee a maximum area?

   *Give the value of the discriminant and use this result to describe the x-intercepts, if any.*

6. \( y = x^2 + 3x + 1 \)  
7. \( y = 6x^2 + 5x - 6 \)

8. Find the maximum or minimum value of the quadratic function and state the \( x \)-value at which this occurs: \( f(x) = -\frac{1}{2}x^2 - 6x + 2 \).

For Exercises 1–8, graph each set of curves in the same coordinate system. For each exercise use a dashed curve for the first equation and a solid curve for each of the others.

7. \( f(x) = x^4, g(x) = (x - 1)^4 - 1, h(x) = (x - 2)^4 - 2 \)

12. \( y = f(x) = (x + 1)^3 - 2 \)  
16. \( y = f(x) = -(x - 1)^3 + 1 \)

Graph each of the following by using translations and reflections.

Find the equation of the curve \( C \) which is obtained from the dashed curve by a horizontal or vertical shift, or by a combination of the two.

18. 

19. 

20. 

21. 

\[ y = x^3 \]

\[ y = |x| \]