

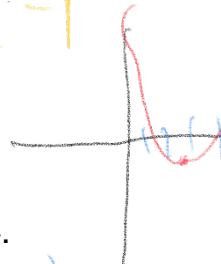
$$\begin{array}{|c|c|c|c|} \hline x & -3 & & \\ \hline x^2 & -9 & & \\ \hline -x & & +8 & \\ \hline -3 & & +9 & \\ \hline \end{array}$$

In Exercises 1-4 (a) find the standard form of the equation, (b) find the x-intercepts, and (c) use this information to sketch a graph:

1. $f(x) = x^2 - 6x + 8$

$$(x-3)^2 - 9 + 8 = 1$$

b) $(x-4)(x-2)$



2. $x^2 - 2x - 15$

a) $(x-7)(x+5)$

2. 1945,

3. $h(x) = 4x^2 + 32x + 64$

$$4(x^2 + 8x + 16)$$

$$(x+4)^2$$

4. $m(x) = x^2 - 4x + 20$

$$-6$$

$$(x-2)^2 = 36, x-2=6, x=8$$

5. For $f(x) = 2x^2$, $g(x) = x + 4$, (a) $f \circ g$, (b) $g \circ f$, and (c) try to find $(f \circ g)(0)$.

$$(f \circ g) = 2(x+4)^2 = 2x^2 + 16x + 32 \quad (g \circ f) = 2x^2 + 4 \quad (f \circ g)(0) = 32$$

For (6) and (7) below, find two functions f and g such that $(f \circ g)(x) = h(x)$. There are many right answers, explain in a complete sentence why yours is correct:

6. $h(x) = \sqrt[3]{x^2 - 4}$

$$f = \sqrt[3]{x}$$

$$g = x - 4$$

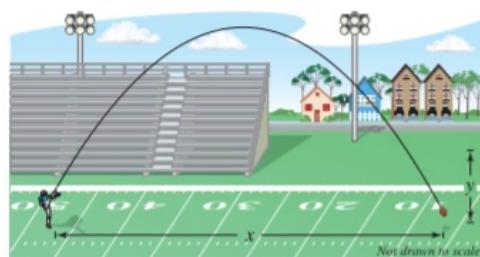
7. $h(x) = \frac{4}{(5x+3)^2}$

$$f = \frac{4}{x^2}, g = 5x+3$$

8. The path of a football is given by

$$y = -0.08x^2 + 1.8x + 3$$

Use the how to solve it method and figure out how high the football gets. Hint: draw a graph!



$$-0.08[x-11.25]^2 + 104$$

$$-0.08[x^2 - 22.5x + 125] + 104$$

$$-0.08x^2 + 1.8x + 3$$

$$-0.08[x^2 - 22.5x - 37.5]$$

$$-0.08[(x-11.25)^2 - 104]$$