

In Exercises 1-2 (a) find the standard form of the equation, (b) find the x-intercepts, and (c) use this information to sketch a graph:

1.  $f(x) = x^2 - 2x - 3$

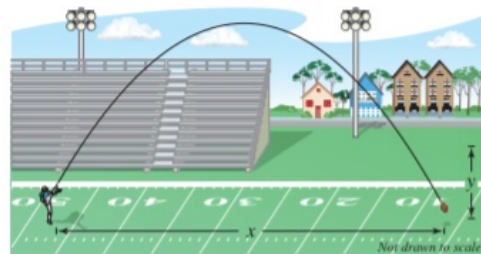
2.  $g(x) = 3x^2 - 21x + 30$

**For (2) and (3), use the *how to solve it method*:**

3. The path of a football is given by

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

How high will the football get? **Hint:** draw a graph!



4. The population of Germany from 2000 through 2021 can be given by

$$P(t) = -14.83t^2 + 95.9t + 82,276$$

Where  $t$  is the year, with  $t = 0$  corresponding to 2000.

- A. What will the population of Germany be
- B. When is the population of Germany predicted to peak?