Do Now.

Terminology Review:

- *Zeros/X-Intercepts: Where the graph crosses the x-axis.*
- *Y-Intercepts: Where the graph crosses the y-intercepts.*

Let $f(x) = 2x - 3$. Find the zeros and the y-intercept of the graph of $f(x)$, then plot the graph.

Discussion.

It's the bottom of the 9th inning with two outs, and the home team is trailing by one run. The crowd at *Victory Field* holds its breath as **Maya**, the team's power hitter, steps up to the plate.

The pitcher throws. Maya swings — **crack!** She hits the ball high into the air. The ball follows a curved path through the sky, and the team's motion tracker records its flight path with the following equation:

$$y = -x^2 + 3x + 10$$

where:

- x represents the horizontal distance from home plate,
- y represents the height of the ball above the ground.

1. When did the ball hit the ground? Find the **horizontal distances** where the ball was at ground level.

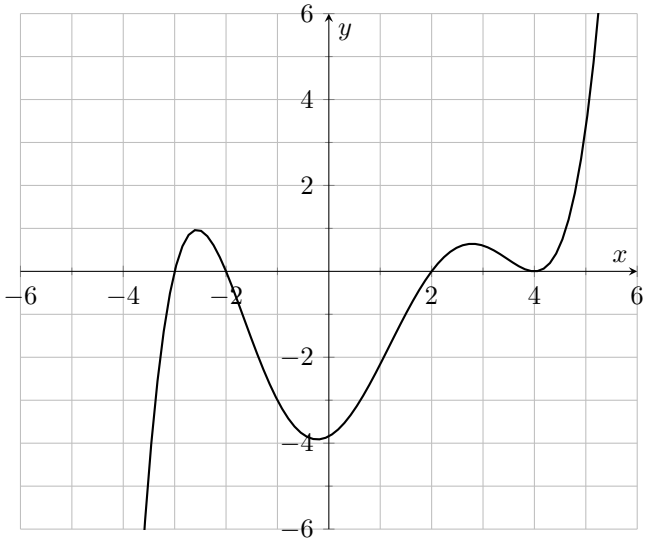
2. How high was the ball when it left the bat at home plate?

3. What was the highest point the ball reached, and how far from home plate did it occur?

4. Sketch the graph of the ball's flight. Label the zeros, y-intercept, and vertex.

Exit Ticket.

Describe the following graph.



Description