

# Math 1513 - College Algebra

## Quiz #14 - 2011.10.04

### Solutions

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1. Discuss the difference in behavior of the graph of a function at a zero with even multiplicity versus that of odd multiplicity.

A zero with even multiplicity will only touch the  $x$ -axis, and *bounce* back the way it came. A zero with odd multiplicity will cross the  $x$ -axis.

2. Plot the the parabola  $p(x) = -5x^2 + 6x + 3$ . Be sure to label the vertex, roots (if any) and  $y$ -intercept.

The vertex is located at  $(\frac{3}{5}, \frac{24}{5})$ , the  $y$ -intercept is 3, and the roots are located at  $x = \frac{3 \pm 2\sqrt{6}}{5}$ . Also, the parabola opens down since the coefficient in front of  $x^2$  is negative. This gives the following graph:

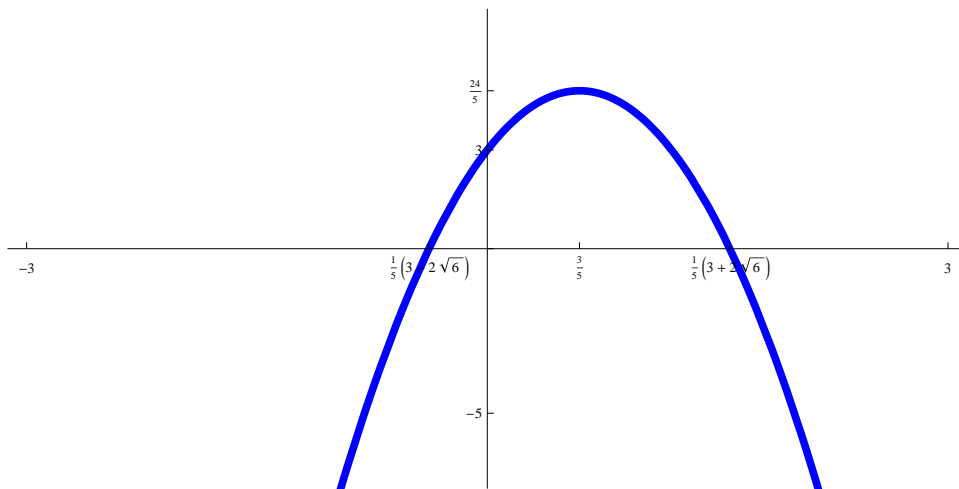


FIGURE 1. The graph of  $p(x) = -5x^2 + 6x + 3$ .