

Problem

For every real number p , the graph of the quadratic equation

$$(y - 2) = 4p(x - 6)^2$$

intersects the x -axis.

- (a) True
- (b) False

Comments: For $p > 0$, the answer is false, for $p < 0$, the answer is true, making for rich discussion. Students should be able to find the vertex of the parabola $(6, 2)$, without writing. Hence leaving the nature of the roots to the value of p .