

NAME: _____

P.I. A2.A.2: Use the discriminant to determine the nature of the roots of a quadratic equation

4. Write a quadratic equation that has two solutions.

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8. Explain how to determine whether the graph of a quadratic function crosses the x -axis.

[1] Answers may vary. Sample: Find the discriminant, $b^2 - 4ac$. If it equals 0, there is only one solution.

[2] one; the value of $b^2 - 4ac$ is $(-10)^2 - 4(5)(5) = 0$.

[3] Answers may vary. Sample: $x^2 = -4$

[4] Answers may vary. Sample: $x^2 + 4x + 3 = 0$

[5] Choose a , b , and c so that $b^2 - 4ac = 0$.

The number of x -intercepts tells you the number of solutions. Two x -intercepts means two solutions, one

[6] x -intercept means one solution, and zero x -intercepts means no solutions.

[7] one real solution; the graph touches the x -axis in only one point.

[8] Find the value of the discriminant, which indicates the number of x -intercepts.