

The Discriminant and the Quadratic Formula with

Main Ideas/Questions	Notes/Examples							
<p>THE DISCRIMINANT</p>	<div style="text-align: center; border: 1px solid black; border-radius: 15px; padding: 10px; width: fit-content; margin: 0 auto;"> $b^2 - 4ac$ </div> <p>The expression under the radical symbol in the quadratic formula. It is used to determine the number of solutions for a quadratic equation.</p> <p>If $b^2 - 4ac > 0$, then there are _____ solutions.</p> <p>If $b^2 - 4ac = 0$, then there are _____ solutions.</p> <p>If $b^2 - 4ac < 0$, then there are _____ solutions.</p>							
	<p>Directions: Use the discriminant to determine the number of solutions.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td data-bbox="488 961 1015 1268" style="width: 50%; padding: 10px;"> 1. $x^2 + 5x + 4$ Number of Solutions _____ </td> <td data-bbox="1015 961 1542 1268" style="width: 50%; padding: 10px;"> 2. $x^2 - 3x + 10$ Number of Solutions _____ </td> </tr> <tr> <td data-bbox="488 1268 1015 1633" style="width: 50%; padding: 10px;"> 3. $4x^2 - 12x + 9$ Number of Solutions _____ </td> <td data-bbox="1015 1268 1542 1633" style="width: 50%; padding: 10px;"> 4. $2x^2 - 4x - 3$ Number of Solutions _____ </td> </tr> <tr> <td data-bbox="488 1633 1015 1990" style="width: 50%; padding: 10px;"> 5. $-x^2 - 5$ Number of Solutions _____ </td> <td data-bbox="1015 1633 1542 1990" style="width: 50%; padding: 10px;"> 6. $2x^2 + 9x$ Number of Solutions _____ </td> </tr> </tbody> </table>		1. $x^2 + 5x + 4$ Number of Solutions _____	2. $x^2 - 3x + 10$ Number of Solutions _____	3. $4x^2 - 12x + 9$ Number of Solutions _____	4. $2x^2 - 4x - 3$ Number of Solutions _____	5. $-x^2 - 5$ Number of Solutions _____	6. $2x^2 + 9x$ Number of Solutions _____
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**THE QUADRATIC
FORMULA**

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

**PRACTICE WITH
RADICAL SOLUTIONS**

Directions: Solve each equation using the quadratic formula. Write the solutions in simplest radical form.

1. $x^2 + 2x = 3 - 2x$

2. $-x^2 + 7x - 18 = 0$

3. $2x^2 - 8x - 2 = 3$

4. $10x^2 - 19 = 5$

5. $4x^2 - 1 = 6x$

6. $2x^2 + 12x = 4 - x^2$