Name:_____ Date:_____Period:_____

NOTES: SOLVE QUADRATICS USING the Quadratic Formula

DAY 1 – THE QUADRATIC FORMULA SKELETON

The Quadratic Formula

When a quadratic equation cannot be solved by factoring, we can find the quadratic roots using the _____ _____.

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

Write each equation in standard form, then substitute the values for a, b and c.

$ax^2 + bx + c = 0$

1. $x^2 - 2x + 4 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

2. $2x^2 - 3x + 1 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

3. $x^2 + 3x - 7 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

4. $3x^2 + 10 = 0$

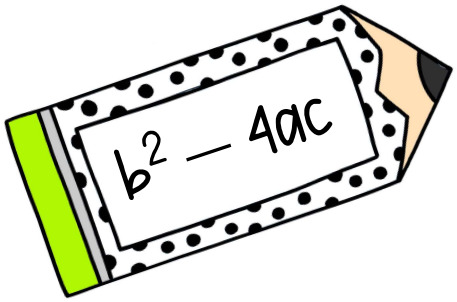
a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

The Discriminant

In a quadratic equation, the discriminant tells you what types of roots the quadratic has.

$b^2 - 4ac$ comes from the _____ _____.



If your discriminant is ...	Then your quadratic will have...
$d > 0$	_____ real roots
$d = 0$	_____ real root
$d < 0$	_____ real roots

Write each equation in standard form, then substitute the values for a, b and c. Determine the value of the discriminant and write the number of solutions in the box provided.

5. $x^2 - 8x = 15$

a=____ b=____ c=____

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

6. $x^2 - 5x + 20 = 0$

a=____ b=____ c=____

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

7. $3x^2 = -5x - 2$

a=____ b=____ c=____

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

8. $x^2 - 8x + 16 = 0$

a=____ b=____ c=____

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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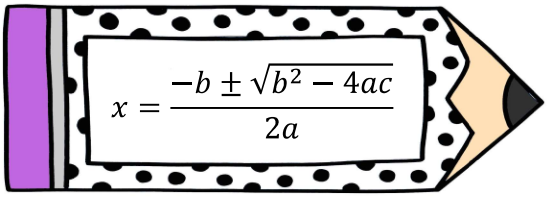
A.__ SOLVE QUADRATICS USING THE Quadratic Formula DAY 1



Write each equation in standard form, then substitute the values for a, b and c. Determine the value of the discriminant and write the number of solutions in the box provided.

1. $3x^2 + 6x - 1 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

2. $2x^2 + 3 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

3. $x^2 + 6x + 10 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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

7. $3x^2 + 2x - 1 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

8. $x^2 - 6x + 9 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

9. $-2x^2 + x - 1 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

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

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

11. $-x^2 + 7x - 5 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$

12. $x^2 + 16 = 0$

a=___ b=___ c=___

$$x = \frac{-(\ ) \pm \sqrt{(\ )^2 - 4(\ )(\ )}}{2(\ )}$$