Math 2 Name_____ ID: 1

Quadratic Formula and Discriminant

Date_____ Period____

Solve each equation with the quadratic formula.

1) $b^2 - 3b - 18 = 0$

2) $x^2 - 5x - 14 = 0$

3) $k^2 - 5k + 6 = 0$

4) $8x^2 = -9$

5) $9x^2 - 7x = -7$

6) $3n^2 + 2 = -8n$

Find the discriminant of each quadratic equation then state the number and type of solutions.

7) $-a^2 - 2a - 1 = 0$

8) $-2a^2 + 2 = 0$

9) $-3x^2 - 6x - 3 = 0$

10) $-6x^2 - x + 5 = 0$

11) $-4x^2 = -4$

12) $-3b^2 + b = -2$

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Solve each equation with the quadratic formula.

1) $b^2 - 3b - 18 = 0$

$\{6, -3\}$

2) $x^2 - 5x - 14 = 0$

$\{7, -2\}$

3) $k^2 - 5k + 6 = 0$

$\{3, 2\}$

4) $8x^2 = -9$

$\left\{\frac{3i\sqrt{2}}{4}, -\frac{3i\sqrt{2}}{4}\right\}$

5) $9x^2 - 7x = -7$

$\left\{\frac{7 + i\sqrt{203}}{18}, \frac{7 - i\sqrt{203}}{18}\right\}$

6) $3n^2 + 2 = -8n$

$\left\{\frac{-4 + \sqrt{10}}{3}, \frac{-4 - \sqrt{10}}{3}\right\}$

Find the discriminant of each quadratic equation then state the number and type of solutions.

7) $-a^2 - 2a - 1 = 0$

0; one real solution

8) $-2a^2 + 2 = 0$

16; two real solutions

9) $-3x^2 - 6x - 3 = 0$

0; one real solution

10) $-6x^2 - x + 5 = 0$

121; two real solutions

11) $-4x^2 = -4$

64; two real solutions

12) $-3b^2 + b = -2$

25; two real solutions