Math on the Fly!

NAME: _____ DATE: _____

The Discriminant and Quadratic Formula

Use the discriminant to determine if the equation has one real solution, two real solutions, or no real solutions.

1. $x^2 + 5x + 8 = 0$

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

3. $3x^2 - 4x - 7 = 0$

4. $2x^2 - 4x + 5 = 0$

5. $-9x^2 + 6x - 1 = 0$

6. $4x^2 - 7x - 3 = 0$

Use the quadratic formula to solve each equation.

7. $2x^2 + 15x - 8 = 0$

8. $x^2 - 6x + 7 = 0$

9. $x^2 + 4x + 5 = 0$

10. $9x^2 + 12x + 4 = 0$

11. $5x^2 - 7x - 6 = 0$

12. $x^2 - 4x + 13 = 0$

13. $-x^2 + 8x - 11 = 0$

14. $-2x^2 + 4x - 10 = 0$

15. $4x^2 - 20x + 25 = 0$

16. $3x^2 + 6x - 3 = 0$

SOLUTIONS

1. $D = (5)^2 - 4(1)(8) = -7$
(No real solutions)

2. $D = (-8)^2 - 4(1)(16) = 0$
(One real solution)

3. $D = (-4)^2 - 4(3)(-7) = 100$
(Two real solutions)

4. $D = (-4)^2 - 4(2)(5) = -24$
(No real solutions)

5. $D = (6)^2 - 4(-9)(-1) = 0$
(One real solution)

6. $D = (-7)^2 - 4(4)(-3) = 97$
(Two real solutions)

7. $x = -8, x = \frac{1}{2}$

8. $x = 3 \pm \sqrt{2}$

9. $x = -2 \pm i$

10. $x = -\frac{2}{3}$

11. $x = 2, x = -\frac{3}{5}$

12. $x = 2 \pm 3i$

13. $x = 4 \pm \sqrt{5}$

14. $x = 1 \pm 2i$

15. $x = \frac{5}{2}$

16. $x = -1 \pm \sqrt{2}$