

Name _____

Date _____ Pd. _____

Notes: Solving Quadratic Equations by Using the Quadratic Formula**Quadratic Formula**the formula $x =$ that gives the solutions of $ax^2 + bx + c = 0$, where $a \neq 0$

Example 1 Solve $x^2 + 2x = 3$ by using the Quadratic Formula.

Example 2 Solve $x^2 - 6x - 2 = 0$ by using the Quadratic Formula. Round to the nearest tenth if necessary.

Case 1: $b^2 - 4ac < 0$	Case 2: $b^2 - 4ac = 0$	Case 3: $b^2 - 4ac > 0$

Example State the value of the discriminant for each equation. Then determine the number of real roots.

a. $12x^2 + 5x = 4$

b. $2x^2 + 3x = -4$

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Exit Card: Solving Quadratic Equations by Using the Quadratic Formula**ECR**

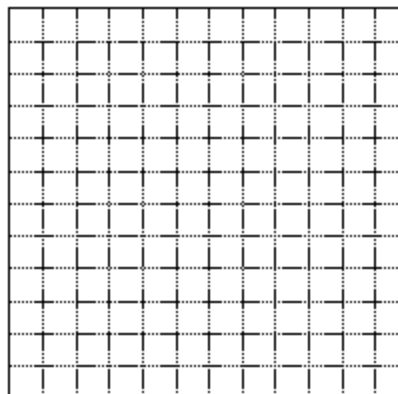
Look at the equations below.

Equation 1: $3x^2 - 7x - 9 = 0$

Equation 2: $5x^2 - 13x + 12 = 0$

- Which equation has no real roots? Use mathematics to justify your answer.
- Solve the equation that has real roots. Use mathematics to show how you determined your answer. Use words, symbols or both in your explanation.

If you choose to answer this question using a graph, use this grid.



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Homework: Pages 550 – 552 (15 – 18, 27, 33, 36, 45, 46, 47, 55, 56)

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

15. Solve $v^2 + 12v + 20 = 0$	16. Solve $3t^2 - 7t - 20 = 0$
17. Solve $5y^2 - y - 4 = 0$	18. Solve $x^2 - 25 = 0$
27. Solve $2(12g^2 - g) = 15$	
33. Rectangle $ABCD$ has a perimeter of 42 centimeters. What are the dimensions of the rectangle if its area is 80 square centimeters?	

36. Without graphing, determine the x -intercepts of the graph of $f(x) = 4x^2 - 9x + 4$.

45. Without graphing, determine the number of x -intercepts of the graph of $f(x) = x^2 + 4x + 7$

As Darius is skiing down a ski slope, Jorge is on the chair lift on the same slope. The chair lift has stopped. Darius stops directly below Jorge and attempts to toss a disposable camera up to him. If the camera is thrown with an initial velocity of 35 feet per second, the equation for the height of the camera is $h = -16t^2 + 35t + 5$, where h represents the height in feet and t represents the time in seconds.

46. If the chair lift is 25 feet above the ground, will Jorge have 0, 1, or 2, chances to catch the camera?

47. If Jorge is unable to catch the camera, when will it hit the ground?

55. Determine the number of solutions to $x^2 - 5x + 8 = 0$.

A 0

B 1

C 2

D infinitely many

56. Which expression represents the solutions of $2x^2 + 5x + 1 = 0$?

A $\frac{5 \pm \sqrt{17}}{4}$

B $\frac{5 \pm \sqrt{33}}{4}$

C $\frac{-5 \pm \sqrt{17}}{4}$

D $\frac{-5 \pm \sqrt{33}}{4}$