

## Lesson 31: Solve using the quadratic formula.

Use the Quadratic Formula to solve.

1)  $x^2 + 5x - 7 = 0$

A)  $\frac{-5 + \sqrt{53}}{2}$  ;  $\frac{-5 - \sqrt{53}}{2}$

B)  $\frac{5 + \sqrt{53}}{2}$  ;  $\frac{5 - \sqrt{53}}{2}$

C)  $\frac{4 + \sqrt{53}}{2}$  ;  $\frac{4 - \sqrt{53}}{2}$

D)  $\frac{-4 + \sqrt{53}}{2}$  ;  $\frac{-4 - \sqrt{53}}{2}$

Use the Quadratic Formula to solve.

2)  $3x^2 + 5x - 2 = 0$

A)  $-\frac{1}{3}$  ;  $-2$       B)  $\frac{1}{3}$  ;  $2$

C)  $\frac{1}{3}$  ;  $-2$       D)  $\frac{1}{5}$  ;  $2$

Use the Quadratic Formula to solve.

3)  $x(x + 7) = 10$

A)  $\frac{-7 + \sqrt{89}}{2}$  ;  $\frac{-7 - \sqrt{89}}{2}$

B)  $\frac{7 + \sqrt{89}}{2}$  ;  $\frac{7 - \sqrt{89}}{2}$

C)  $\frac{-5 + \sqrt{89}}{2}$  ;  $\frac{-5 - \sqrt{89}}{2}$

D)  $\frac{-7 + \sqrt{67}}{2}$  ;  $\frac{-7 - \sqrt{67}}{2}$

Use the Quadratic Formula to solve.

3)  $x(x+7) = 10$

A)  $\frac{-7 + \sqrt{89}}{2}$  ;  $\frac{-7 - \sqrt{89}}{2}$

B)  $\frac{7 + \sqrt{89}}{2}$  ;  $\frac{7 - \sqrt{89}}{2}$

C)  $\frac{-5 + \sqrt{89}}{2}$  ;  $\frac{-5 - \sqrt{89}}{2}$

D)  $\frac{-7 + \sqrt{67}}{2}$  ;  $\frac{-7 - \sqrt{67}}{2}$

Use the Quadratic Formula to solve.

4)  $x(3x+2) = 5$

A)  $-1$  ;  $\frac{-5}{3}$

B)  $1$  ;  $\frac{-5}{3}$

C)  $1$  ;  $\frac{5}{3}$

D)  $-1$  ;  $\frac{5}{3}$

Find the value of the discriminant.

Then, determine the number and type of solutions of the equation.

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

a) Discriminant =  $b^2 - 4ac =$  \_\_\_\_\_

b) Choose the correct answer.

A) There are two irrational solutions.

B) There are two complex solutions of the form  $a + bi$  and  $a - bi$  where  $a$  is not a 0.

C) There is one rational solution.

D) There are two rational solutions.

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

a) Discriminant =  $b^2 - 4ac =$  \_\_\_\_\_

b) Choose the correct answer.

A) There are two irrational solutions.

B) There are two complex solutions of the form  $a + bi$  and  $a - bi$  where  $a$  is not a 0.

C) There is one rational solution.

D) There are two rational solutions.

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

a) Discriminant =  $b^2 - 4ac =$  \_\_\_\_\_

b) Choose the correct answer.

A) There are two irrational solutions.

B) There are two complex solutions of the form  $a + bi$  and  $a - bi$  where  $a$  is not a 0.

C) There is one rational solution.

D) There are two rational solutions.

8)  $12x^2 + 7x - 2 = 0$ .

a) Discriminant =  $b^2 - 4ac =$  \_\_\_\_\_

b) Choose the correct answer.

A) There are two irrational solutions.

B) There are two complex solutions of the form  $a + bi$  and  $a - bi$  where  $a$  is not a 0.

C) There is one rational solution.

D) There are two rational solutions.