

#98a

Algebra

BB4

Intro

Name _____

How many real solutions does the equation have?

$$p^2 = 69$$

- no real solution
- one real solution
- two real solutions

How many real solutions does the equation have?

$$v^2 = 0$$

- no real solution
- one real solution
- two real solutions

How many real solutions does the equation have?

$$y^2 = -15$$

- no real solution
- one real solution
- two real solutions

How many real solutions does the equation have?

$$z^2 - 3 = 0$$

- no real solution
- one real solution
- two real solutions

Solve for h .

$$h^2 = 49$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$h = \boxed{} \text{ or } h = \boxed{}$$

Solve for w .

$$w^2 = 1$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$w = \boxed{} \text{ or } w = \boxed{}$$

Solve for u .

$$u^2 = 81$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$u = \boxed{} \text{ or } u = \boxed{}$$

Solve for r .

$$r^2 = 25$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$r = \boxed{} \text{ or } r = \boxed{}$$

Solve for x .

$$x^2 - 17 = -16$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$x = \boxed{} \text{ or } x = \boxed{}$$

Solve for k .

$$k^2 + 35 = 99$$

Write your answers as integers or as proper or improper fractions in simplest form.

$$k = \boxed{} \text{ or } k = \boxed{}$$

#986

Algebra 1

9-5A

Name _____ Pd _____

Notes:

- Zeros/roots are where the parabola hits the x-axis.
- Methods of finding zeros/roots of a quadratic:
 - Factoring, set equal to zero, solve
 - Graphing by t-table or using a graphing calculator. Look where it crosses the x-axis.
 - Quadratic Formula
- Given the general form of a quadratic $ax^2 + bx + c = 0$, the roots can be found with:

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

** $b^2 - 4ac$ is called the discriminant*

- Steps
 - Identify a, b, c
 - Plug the values into the formula. -b means $-1 \cdot b$
 - Simplify the square root until it is 1 number
 - Write the equation twice. Once with a + and once with a -

Solve each using the quadratic formula:

1. $x^2 - 2x - 15 = 0$

2. $x^2 - 10x + 16 = 0$

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

16. $4x^2 + 5x - 6 = 0$

22. $81x^2 = 9$

23. $8x^2 + 12x = 8$

#98c

Algebra 1

~~8/5/21~~

Name _____ Pd _____

Solve using the quadratic formula:

3. $x^2 - 8x = -10$

8. $2x^2 - 3x - 6 = 0$

24. $4x^2 = -16x - 16$

9. $9x^2 = 25$

10. $x^2 - 9x = -19$

29. $2x^2 - 8x = 12$

Solve on Calculator

17. $x^2 + 16 = 0$

18. $6x^2 - 12x + 1 = 0$

30. $3x^2 - 24x = -36$

4. $x^2 + 3x = 12$

5. $10x^2 - 31x + 15 = 0$

6. $5x^2 + 5 = -13x$

19. $5x^2 - 8x = 6$

20. $2x^2 - 5x = -7$

21. $5x^2 + 21x = -18$

#98d

Solve the following:

4 $x^2 - 4x = 21$

5 $x^2 - 7x = -6$

6 $x^2 + 20 = -9x$

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

8 $x^2 + (5/2)x = -1$

9 $x^3 = -3x^2 - 2x$

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

Solve the following:

4 $x^2 - 4x = 21$

$$\begin{aligned}x^2 - 4x - 21 &= 0 \\(x-7)(x+3) &= 0 \\x &= 7 \text{ \& } -3\end{aligned}$$

$$\begin{array}{r}21 \\ -7 \quad 3 \\ \hline -4\end{array}$$

5 $x^2 - 7x = -6$

$$\begin{aligned}x^2 - 7x + 6 &= 0 \\(x-6)(x-1) &= 0 \\x &= 6 \text{ \& } 1\end{aligned}$$

$$\begin{array}{r}6 \\ -6 \quad -1 \\ \hline -7\end{array}$$

6 $x^2 + 20 = -9x$

$$\begin{aligned}x^2 + 9x + 20 &= 0 \\(x+4)(x+5) &= 0 \\x &= -4 \text{ \& } -5\end{aligned}$$

$$\begin{array}{r}20 \\ 4 \quad 5 \\ \hline 9\end{array}$$

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

$$\begin{aligned}2x^2 - 3x - 2 &= 0 \\2x^2 - 4x + 1x - 2 &= 0 \\2x(x-2) + 1(x-2) &= 0 \\(x-2)(2x+1) &= 0 \\x &= 2 \text{ \& } -\frac{1}{2}\end{aligned}$$

$$\begin{array}{r}-4 \\ -4 \quad 1 \\ \hline -3\end{array}$$

8 $x^2 + (5/2)x = -1$

$$\begin{aligned}x^2 + \frac{5}{2}x + 1 &= 0 \\2x^2 + 5x + 2 &= 0 \\2x^2 + 1x + 4x + 2 &= 0 \\x(2x+1) + 2(x+1) &= 0 \\(2x+1)(x+2) &= 0 \\x &= -\frac{1}{2} \text{ \& } -2\end{aligned}$$

$$\begin{array}{r}4 \\ 1 \quad 4 \\ \hline 5\end{array}$$

9 $x^3 = -3x^2 - 2x$

$$\begin{aligned}x^3 + 3x^2 + 2x &= 0 \\x(x^2 + 3x + 2) &= 0 \\x(x+2)(x+1) &= 0 \\x &= 0, -2, \text{ \& } -1\end{aligned}$$

$$\begin{array}{r}2 \\ 2 \quad 1 \\ \hline 3\end{array}$$

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

$$\begin{aligned}x^2(x^2 + 3x - 10) &= 0 \\x^2(x+5)(x-2) &= 0 \\x &= 0, -5, 2\end{aligned}$$

$$\begin{array}{r}-10 \\ 5 \quad -2 \\ \hline 3\end{array}$$