Graphs and Equations

Solving Mixed Equations

Types of equations we know how to solve so far:

Linear Equations: Isolate the variable one side of the equation.

System of Linear Equations: Use elimination or substitution methods.

Quadratic Equations: Methods include the square root method, quadratic formula, factoring, or completing the square.

Radical Equations: Isolate the radical and raise both sides to a power that will cancel the radical.

Rational Equations: Multiply both sides by the LCD to clear the fraction and solve the resulting equation.

Absolute Value Equations: Isolate the absolute value and then make two equations without absolute values assuming that what is inside the absolute value could be positive or negative.

Match the following equations to their type:

Linear Equations

$$3x^2 = 5x - 2$$

System of Linear Equations

$$\frac{1}{x+3} + \frac{x-3}{x^2-9} = 2$$

Quadratic Equations

$$2|x+7| = 10$$

Radical Equations

$$8x + 5 = 29 - 4x$$

Rational Equations

$$\begin{cases} x + y = 3 \\ 2x - 3y = 5 \end{cases}$$

Absolute Value Equations

$$4\sqrt{x+1} + 12 = 20$$

Solve the following equations.

$\sqrt{x+2}+4=x$

The solution set is _____

$7(y-3)=2(y-9)+2y$

The solution set is _____

Solve the following equations.

$$\frac{x}{x-1}-\frac{2}{x}=\frac{1}{x-1}$$

The solution set is _____

$$12x^2=13x-3$$

The solution set is _____

Solve the following equations.

$|2x-3|-4=7$

The solution set is _____

$2x^2+12x=-4$

The solution set is _____

Solve the following system.

$$\begin{cases} 2x + y = -3 \\ 3x - 2y = -8 \end{cases}$$

The solution set is _____.