

Today's Plan:

Learning Target (standard): I will review solving quadratic equations and non-linear inequalities. I will practice graphing quadratic equations.

Students will: Complete practice problems over previous concepts at the boards, put up homework problems on the board and make necessary corrections to their own work, and complete practice problems.

Teacher will: Provide practice problems over previous concepts, check homework problems for accuracy and provide students feedback, describe and provide examples of review concepts and assign students assessment problems over them.

Assessment: Board work, homework check and homework assignment

Differentiation: Students will work at the board, go over and correct homework at their seats, actively engage in practicing review concepts with the aid of other students and the teacher and complete homework assignment.

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$$24) \left\{ x \mid x \leq -2, \frac{1}{3} \leq x \leq 2 \right\}$$

$$26) \left\{ x \mid -4 < x < -\frac{7}{2}, x > 2 \right\}$$

$$28) \left\{ x \mid x < -3, -1 < x < 3 \right\}$$

$$30) \left\{ x \mid -2 \leq x \leq -\frac{3}{2}, x \geq 2 \right\}$$

$$32) \left\{ x \mid x < -2, x > 3 \right\}$$

$$34) \left\{ x \mid x < 0, x > 1 \right\}$$

$$36) \left\{ x \mid -3 \leq x \leq 1, x > 2 \right\}$$

$$38) \left\{ x \mid -1 < x < 1 \right\}$$

$$40) \left\{ x \mid x < 1, x > \frac{5}{2} \right\}$$

$$42) \left\{ x \mid x < -1, 1 < x \leq 2 \right\}$$

$$44) \left\{ x \mid \frac{1}{2} < x \leq 1 \right\}$$

Solve and graph the inequality.

$$x^2 + 6x > -9$$

$$x^2 + 6x + 9 > 0$$

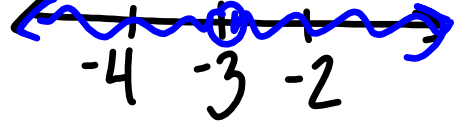
$$(x+3)(x+3) > 0$$

$$x = -3 \quad (+)$$

$$\begin{array}{c} 9 \\ \swarrow \quad \searrow \\ 3 \quad + \quad 3 = 6 \end{array}$$

$$x+3 \quad - \quad 0 \quad +$$

$$x+3 \quad - \quad 0 \quad +$$



$$\{x \mid x \neq -3\}$$

Solve and graph the inequality.

$$4x^2 - 8x + 3 < 0$$

$$4x^2 - 6x - 2x + 3 < 0$$

$$2x(2x-3) - 1(2x-3) < 0$$

$$(2x-3)(2x-1) < 0$$

$$x = \frac{3}{2}, \frac{1}{2} \quad (-)$$

$$\begin{array}{c} 12 \\ \swarrow \quad \searrow \\ -6 \quad + \quad 2 = -8 \end{array}$$

$$2x-3 \quad - \quad 0 \quad +$$

$$2x-1 \quad - \quad 0 \quad +$$



$$\{x \mid \frac{1}{2} < x < \frac{3}{2}\}$$

Solve and graph the inequality.

$$\frac{2x-5}{x-4} \leq 1$$

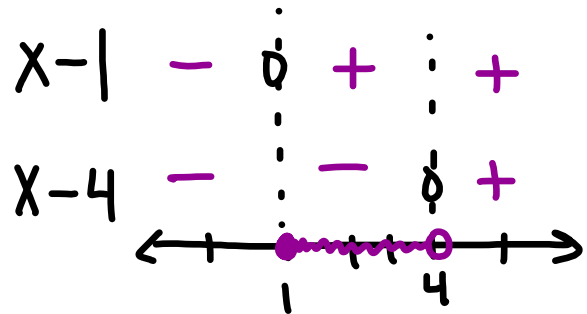
$$\frac{2x-5}{x-4} - 1 \leq 0$$

$$\frac{2x-5}{x-4} + \frac{-x+4}{x-4} \leq 0$$

$$\frac{x-1}{x-4} \leq 0$$

(-)

$x=1, 4$



$$\{x \mid 1 \leq x < 4\}$$

Solve the equation using the square root property.

$$\left(x + \frac{1}{2}\right)^2 + 4 = 0$$

$$\sqrt{\left(x + \frac{1}{2}\right)^2} = \sqrt{-4}$$

$$x + \frac{1}{2} = 2i, -2i$$

$$x = -\frac{1}{2} + 2i, -\frac{1}{2} - 2i$$

Solve the equation by completing the square.

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

$$\frac{2}{2} = 1^2 = 1$$

$$\frac{3x^2 - 6x}{3} = \frac{2}{3}$$

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

$$\frac{\sqrt{5}}{\sqrt{3}} \cdot \frac{\sqrt{3}}{\sqrt{3}} = \frac{\sqrt{15}}{3}$$

$$\sqrt{(x-1)^2} = \pm \frac{\sqrt{5}}{3}$$

$$x-1 = \frac{\sqrt{15}}{3}, -\frac{\sqrt{15}}{3}$$

$$x = 1 + \frac{\sqrt{15}}{3}, 1 - \frac{\sqrt{15}}{3}$$

$$x = \frac{3 + \sqrt{15}}{3}, \frac{3 - \sqrt{15}}{3}$$

Solve the equation using the quadratic formula.

$$x^2 + 4x + 12 = 0$$

$$a=1$$

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

$$b^2 - 4ac$$

$$b=4$$

$$4^2 - 4(1)(12)$$

$$c=12$$

$$x = \frac{-4 \pm \sqrt{-32}}{2(1)}$$

$$\begin{array}{r} 32 \\ \sqrt{16} \cdot 2 \\ 4\sqrt{2} \end{array}$$

$$16 - 48$$

$$-32 < 0 \quad 2 \text{ complex}$$

$$= \frac{-4 \pm 4\sqrt{2}i}{2}$$

$$= -2 \pm 2\sqrt{2}i$$

$$x = -2 + 2\sqrt{2}i, -2 - 2\sqrt{2}i$$

Assignment:

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