

Quiz 8.5

1. (3 points) Graph the quadratic function. Based on the graph, determine the domain and range of the quadratic function.

$$h(x) = -x^2 - 10x - 25$$

2. (2 points) The sum of two numbers is 36. Find the numbers such that their product is a maximum.

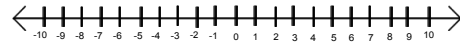
3. (3 points) Maurice has 500 yards of fencing and wishes to enclose a rectangular area. What is the maximum area that can be enclosed by the fence? What are the dimensions of the area enclosed.

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8.6 Quadratic Inequalities

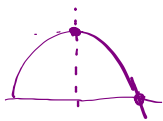
Solve the following using the graphical method.

$x^2 - 4x - 5 \geq 0$
 $(x-5)(x+1) = 0$
 $x=5 \quad x=-1$
 $(-\infty, -1] \cup [5, \infty)$



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73) $s(t) = -16t^2 + 240t + 10$
 a) $(-\frac{b}{2a}, f(\frac{-b}{2a})) \quad \frac{-b}{2a} = \frac{-240}{2(-16)} = 7.5 \text{ sec}$



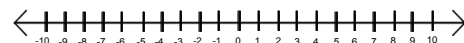
85)

$2000 = 2w + l$
 $A = lw$
 $A = w(2000 - 2w)$
 $A = -2w^2 + 2000w$
 $l = 2000 - 2w$
 $\frac{-b}{2a} = v$

Nov 17-1:02 PM

Solve the following using the algebraic method.

$x^2 - 4x - 5 \geq 0$
 $(x-5)(x+1)$
 $x=5 \quad x=-1$
 $(-2)^2 - 4(-2) - 5$
 $+ \quad +$



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You Try

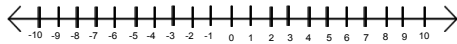
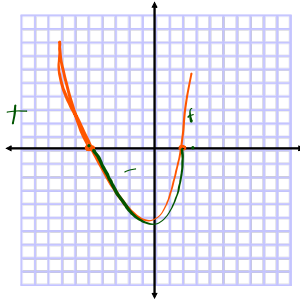
Solve the following using the graphical method.

$$x^2 + 3x - 10 < 0$$

$$(x+5)(x-2)$$

$$x = -5, 2$$

$$(-5, 2)$$

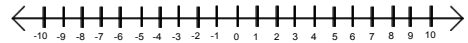


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You Try

Solve the following using the algebraic method.

$$x^2 + 3x - 10 < 0$$



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Solve the following using the algebraic method.

$$2x^2 > 4x - 1$$

$$2x^2 - 4x + 1 > 0$$

$$2x^2 - 4x = -1$$

$$2(x^2 - 2x + 1) = -1 + 2$$

$$2(x-1)^2 = 1$$

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

$$\frac{2}{-2} \pm \frac{1}{2} \pm \frac{1}{2}$$

$$x-1 = \pm \frac{1}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$$

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

$$x = 1 \pm \frac{\sqrt{2}}{2}$$

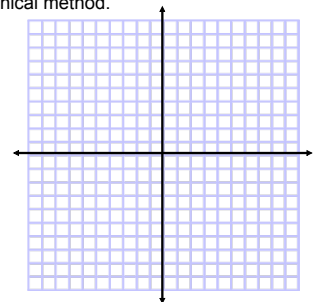


$$(-\infty, 1 - \frac{\sqrt{2}}{2}) \cup (1 + \frac{\sqrt{2}}{2}, \infty)$$

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Solve the following using the graphical method.

$$2x^2 > 4x - 1$$



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You try

Solve the following using the algebraic method.

$$3x^2 + x - 5 < 0$$

$$x = \frac{-1 \pm \sqrt{1^2 - 4(3)(-5)}}{2(3)} \quad \left(\frac{-1 - \sqrt{61}}{6}, \frac{-1 + \sqrt{61}}{6} \right)$$

$$x = \frac{-1 \pm \sqrt{61}}{6} \quad 3x^2 < -x + 5$$

$$3x^2 + x - 5 < 0$$

$$x = 1.14$$

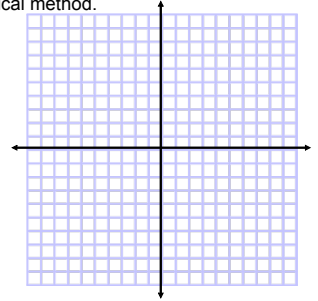
$$x = -1.46$$

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You try

Solve the following using the graphical method.

$3x^2 < -x + 5$



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Solve the following using the algebraic method.

$y^2 + 3y + 5 \geq 0$

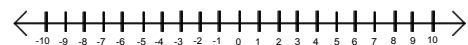
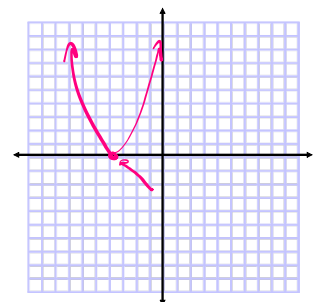
$$x^2 + 8x + 16 > 0$$

$$(x+4)^2 > 0$$

$$x = -4$$

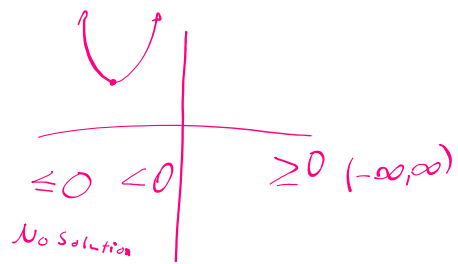
$$(-\infty, \infty), x \neq -4$$

$$\{x \mid x \neq -4\}$$



Apr 1-2:03 PM

Apr 6-10:30 AM



Mar 16-12:33 PM