

Ex 5 Solving quadratic inequality

$$x^2 - x - 12 < 0$$

$$x^2 - x - 12 = 0$$

Solve equality

$$(x+3)(x-4) = 0$$

$$\begin{array}{r} -12 \quad -1 \\ 3(4) \overline{) 3-4} = -1 \end{array}$$

$$x+3=0$$

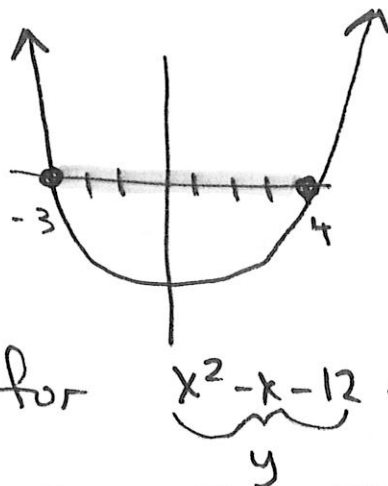
$$x-4=0$$

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

$$\begin{array}{r} +4 \quad +4 \\ \hline \end{array}$$

$$x = -3$$

$$x = 4$$



$$-3 < x < 4$$

$$\boxed{(-3, 4)}$$

Solution for $x^2 - x - 12 < 0$

$$-x^2 - x - 12 > 0$$

$$(-\infty, -3) \cup (4, \infty)$$

for parts of graph
ABOVE x-axis

Ex 7 Projectile launched from ground level
height s in feet, t seconds after launch

$$s = -16t^2 + 96t$$

When will the projectile be greater than
80 feet above ground?

1.7

Day 2 (2)

$$80 < -16t^2 + 96t$$

$$-16t^2 + 96t > 80$$

$$-16t^2 + 96t = 80$$

$$\begin{array}{r} -80 \\ -80 \end{array}$$

$$-16t^2 + 96t - 80 = 0$$

$$\begin{array}{r} -16 \\ -16 \end{array} (t^2 - 6t + 5) = \begin{array}{r} 0 \\ -16 \end{array}$$

$$t^2 - 6t + 5 = 0$$

$$(t-1)(t-5) = 0$$

$$t-1=0$$

$$\begin{array}{r} +1 \\ +1 \end{array}$$

$$t=1 \text{ sec}$$

$$t-5=0$$

$$\begin{array}{r} +5 \\ +5 \end{array}$$

$$t=5 \text{ sec}$$

$$1 < x < 5$$

$$\boxed{(1, 5)}$$

① Solve equality

$$\begin{array}{r} 5 \mid -6 \\ (-1)(-5) \mid -1 + -5 = -6 \end{array}$$

