

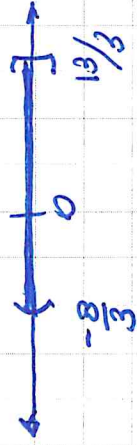
Math 27, HW #4 Selected Problems

Pg. B46, #26 Solve: $-8 \leq -3x + 5 < 13$

$$\Rightarrow -13 \leq -3x < 8 \Rightarrow \frac{-13}{-3} \geq x > \frac{-8}{3} \Rightarrow -\frac{8}{3} < x \leq \frac{13}{3}$$

Interval: $(-\frac{8}{3}, \frac{13}{3}]$

Graph:

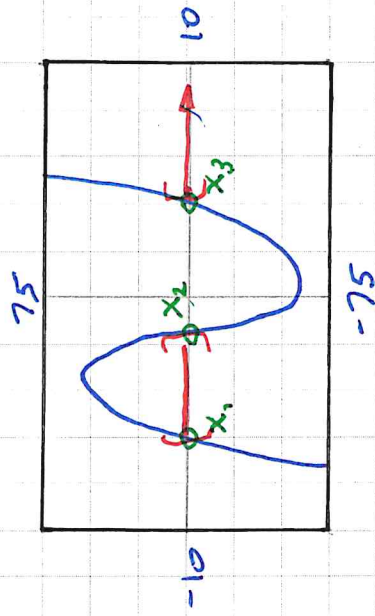


Pg. B47, #72 Solve: $2x^3 + 13x^2 - 8x - 46 \geq 6$

Zero Form: $2x^3 + 13x^2 - 8x - 52 \geq 0$

Graph: $y_1 = 2x^3 + 13x^2 - 8x - 52$

Interval: $[-6.5, -2] \cup [2, \infty)$



$$x_1 = -6.5$$

$$x_2 = -2$$

$$x_3 = 2$$

Pg. 347 # 84

Solve: $\frac{x+12}{x+2} - 3 \geq 0$

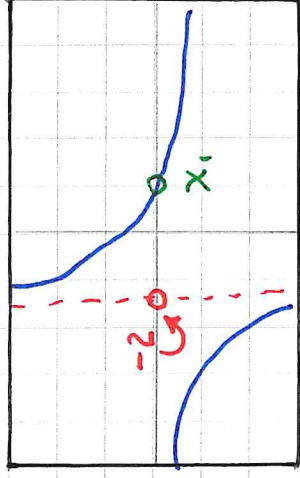
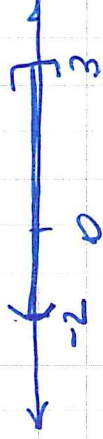
Graph: $y_1 = (x+12)/(x+2) - 3$

* Undefined when $x = -2$

$x_1 = 3$

Interval: $(-2, 3]$

Graph:



$\frac{x+12}{x+2} \geq 3$

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

$$= \frac{-8 \pm \sqrt{64 - 4(-4)}}{2}$$

$$= \frac{-8 \pm \sqrt{64 + 16}}{2}$$

$$= \frac{-8 \pm \sqrt{80}}{2}$$

$$= \frac{-8 \pm 4\sqrt{5}}{2} = \frac{-8}{2} \pm \frac{4\sqrt{5}}{2} = \boxed{-4 \pm 2\sqrt{5}}$$

OR

$$= \frac{2\cancel{4}(-2 \pm \sqrt{5})}{\cancel{2}}$$

$$= \boxed{2(-2 \pm \sqrt{5})}$$