WK	Activity	Monday
5	Secs 2.3, 2.4, 2.5 due 2/19, Test 1 re-hash, as time allows and need demands. Make SURE you know what you missed, and why, using the Solutions under Tests-U-Took link.	2/12
6	Begin WP2. EARLY BIRD BONUS: Get WP2 in by Friday's meeting, for 5 Bonus Points. Secs 2.6, 2.7 due 2/28.	2/19
7	**Bring WP2 with you to Test 2 for full credit. DO NOT staple your WP2 to your Test 2.** **Test 2**, Chapters 1-2, is Wednesday. Secs 3.1, 3.2 due 3/5	2/26

WEEK 5

WEEK 6 – §2.7 ~~3~~.
§2.6 I'd like it in, before the test, but no penalty.

I messed-up the due dates, but we're OK.
Do try to get all homework done, by Friday.
That leaves Prep-for-Test-2 time.

Compound Inequality $3 \geq x \geq 7$ is understood as "AND"

$3 \geq 7$?

$3x-2 < 7$ and $3x-2 > -7$

$|3x-2| < 7 \Rightarrow$

$-7 < 3x-2 < 7$ is OK, but risky style.

$3x-2 > 7$ OR $3x-2 < -7$

$|3x-2| > 7$

$-7 > 3x-2 > 7$ is NOT OK

$f(x) = \frac{1}{x-3}$ $g(x) = \sqrt{x+5}$

Need: $x+5 \geq 0$

$\{x \mid x \geq -5\}$

$= [-5, \infty)$

$\mathcal{D}(f) = \mathbb{R} \setminus \{3\}$

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

$$\mathcal{D}(f+g) = \{x \mid x \in \mathcal{D}(g) \text{ and } x \in \mathcal{D}(f)\}$$

N Y Y N Y AND !

$\mathcal{D}(f+g) = [-5, 3) \cup (3, \infty)$

same for fg, $f-g$

sum, product, difference same.

If it's an "OR", it's all real numbers.

$$\left(\frac{f}{g}\right) = \frac{\frac{1}{x-3}}{\sqrt{x+5}}$$

$$\mathcal{D}\left(\frac{f}{g}\right) = \{x \mid x \in \mathcal{D}(f) \text{ and } \mathcal{D}(g) \text{ and } g(x) \neq 0\}$$

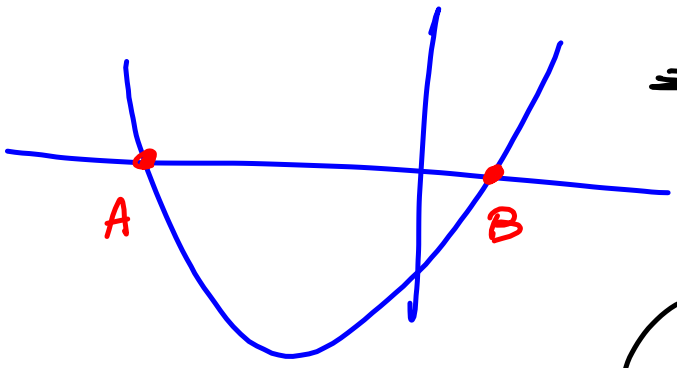
$g(x) = 0$ @ $x = -5$, so throw it out: $\mathcal{D}\left(\frac{f}{g}\right) = (-5, 3) \cup (3, \infty)$

very subtle difference

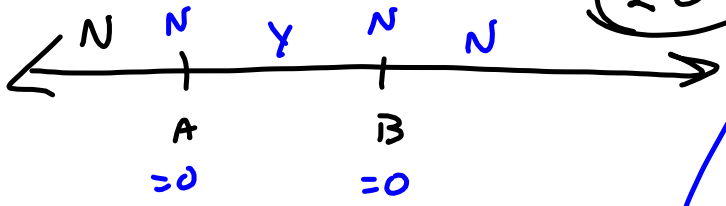
$$\mathcal{D}(fg) = \mathcal{D}(f-g) = \mathcal{D}(f+g) = \{x \mid x \in \mathcal{D}(g) \text{ and } x \in \mathcal{D}(f)\}$$

$$= [-5, 3) \cup (3, \infty)$$

#101 §2.5 Solve $\sqrt{3}x^2+\pi x-9<0$



$\Rightarrow x \in (A, B)$

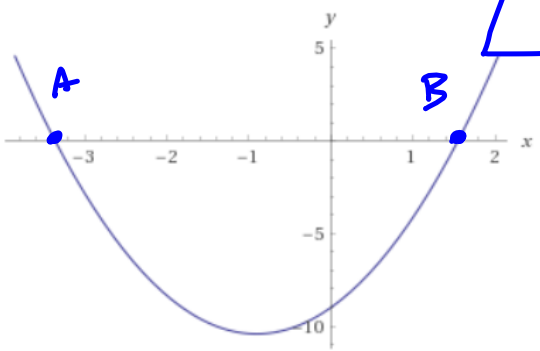


<0

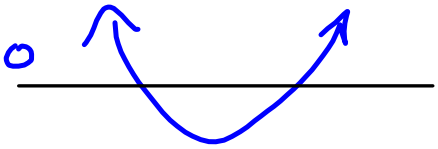
$A \approx -3.3602$

$B \approx 1.5464$

$x \in (-3.3602, 1.5464)$



Know $\sqrt{3}x^2 + \pi x - 9 < 0$



$\Rightarrow a = \sqrt{3}, b = \pi, c = -9 \Rightarrow$

$b^2 - 4ac = \pi^2 - 4(\sqrt{3})(-9)$

$= \pi^2 + 36\sqrt{3}$

$x = \dfrac{-\pi \pm \sqrt{\pi^2 + 36\sqrt{3}}}{2\sqrt{3}}$

$\Rightarrow \left(\dfrac{-\pi - \sqrt{\pi^2 + 36\sqrt{3}}}{2\sqrt{3}}, \dfrac{-\pi + \sqrt{\pi^2 + 36\sqrt{3}}}{2\sqrt{3}} \right)$

Special Recognition

$y = \sqrt{4-x^2}$ is a half-circle, radius 2, centered @ (0,0).

$y^2 = \left(\sqrt{4-x^2}\right)^2 = 4-x^2$

$+x^2 \quad = \quad +x^2$

$x^2+y^2=4$. See?

This one's hard to "see" & can be intimidating, but this is all it is.