I've made some recommendations, based on Test 1, whether or not you ought to drop back to late-start MAT 055. Intermediate Algebra.

Resources. Know them or ask me about them.

(5) $9x^2 = 11 \Rightarrow 9x^2 + 0x - 11 = 0$

$a = 9, b = 0, c = -11$

$\Rightarrow b^2 - 4ac = 0^2 - 4(9)(-11) = 396 > 0$

$\Rightarrow$ 2 real solns.

(4) Spts $7x^2 + 5x + 7 = 0 \longrightarrow$

$a = 7, b = 5, c = 7 \longrightarrow$

$b^2 - 4ac = (5)^2 - 4(7)(7) = 25 - 196 = -171$

$3 \mid 171$

$3 \mid 57$

19

$\Rightarrow \sqrt{171} = 3\sqrt{19} \longrightarrow$

$x = \dfrac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \dfrac{-7 \pm 3i\sqrt{19}}{2(7)} = \dfrac{-7 \pm 3i\sqrt{19}}{14} = x$

#6 $7x^2+5x+7=0$

$b^2-4ac = 25-4(7)(7) = 25-196 = -171$

$<0 \Rightarrow$ 2 nonreal sol'ns

$\pm\sqrt{-171}$ in the answer.

$3+2i$

Real Part.

Imaginary Part

$\frac{2}{8} = \frac{1}{4}$ $\frac{4}{2} = 2$

Lowest Terms.

Test had 125 points.

I'm willing to make it over 100 points, instead.

$195x^2 + 107x - 70 = 0$

$a = 195, b = 107, c = -70$

$\Rightarrow b^2 - 4ac = 107^2 - 4(195)(-70)$

$= \ldots = 46049$

$\sqrt{46049} = 257$

$x = \frac{-b \pm \sqrt{b^2-4ac}}{2a} = \frac{-107 \pm 257}{2(195)}$

$= \frac{-107+257}{2(195)} = \frac{150}{2(195)} = \frac{75}{195} = \frac{5}{13}$

$\frac{-107-257}{2(195)} = \frac{-364}{2(195)}$

$= \frac{-182}{195} = \frac{-2 \cdot 7 \cdot 13}{3 \cdot 5 \cdot 13} = -\frac{14}{15}$

$x \in \left\{\frac{5}{13}, -\frac{14}{15}\right\}$

Trick the teacher:

$195\left(x - \frac{5}{13}\right)\left(x + \frac{14}{15}\right)$

$(15)(13)\left(x - \frac{5}{13}\right)\left(x + \frac{14}{15}\right) = (13x-5)(15x+14) = 0$

$\Rightarrow x \in \left\{-\frac{14}{15}, \frac{5}{13}\right\}$

$195 = 3 \cdot 5 \cdot 13$

$182 = 2 \cdot 7 \cdot 13$

Chapter 3: $\left(x - \frac{2+\sqrt{3}}{7}\right)\left(x - \frac{2-\sqrt{3}}{7}\right)$

Last time: $f+g$, $f-g$, $f\cdot g$, $\frac{f}{g}$, $f\circ g$ & their domains

Quadratic inequalities.

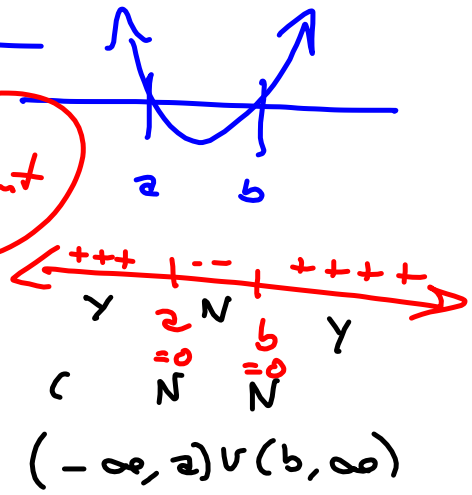
$x^2+5x-6>0$

$\Rightarrow (x+6)(x-1)>0$

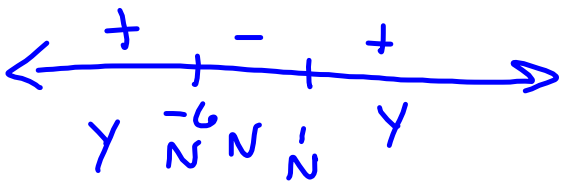
$x+6>0$ OR $x-1>0$

↳ FALSE!

$x=-6$ & $x=1$ are critical #s



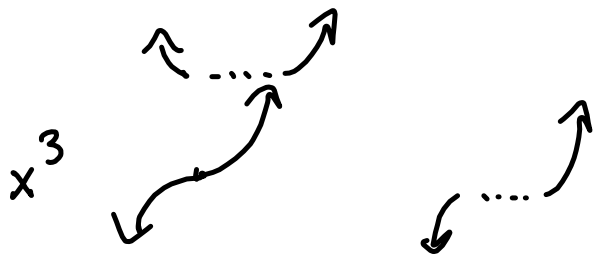
$(-\infty, a) \cup (b, \infty)$



want >0

$x \in (-\infty, -6) \cup (1, \infty)$

x^2 is + off to the right & left

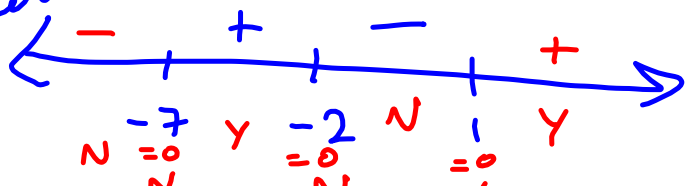


$(x-1)(x+2)(x+7) > 0$

x^3 + smaller stuff

$(x-1)(x+2)(x+7) > 0$

Sign Pattern:

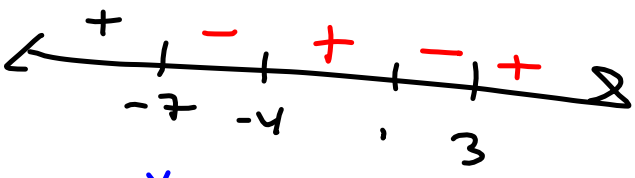


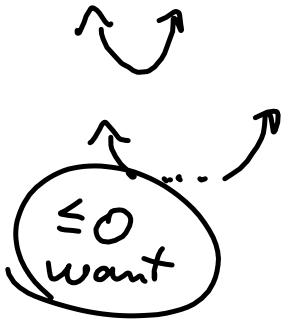
Once you get one interval +/−, it reduces to managing sign changes.

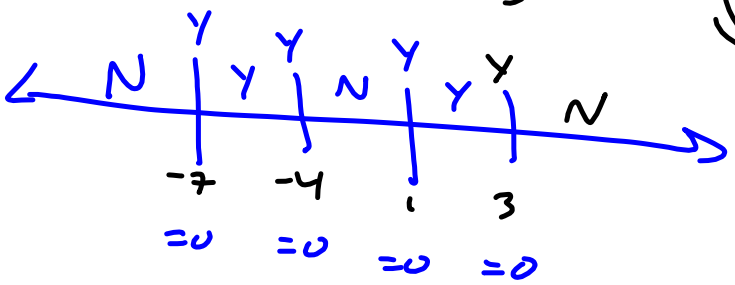
$\Rightarrow$ $x \in (-7,-2) \cup (1,\infty)$

$(x+7)(x-1)(x+4)(x-3) \leq 0$

$x^4 + \cdots$

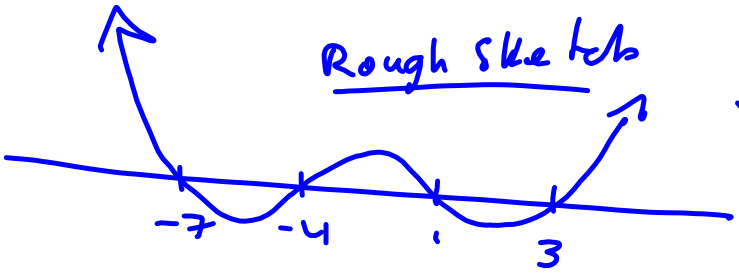


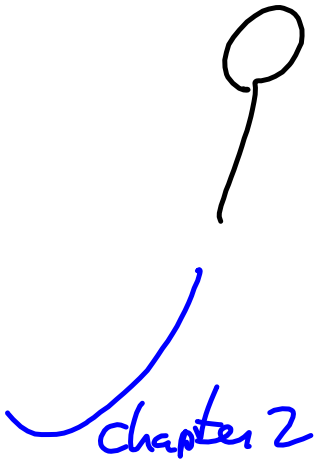




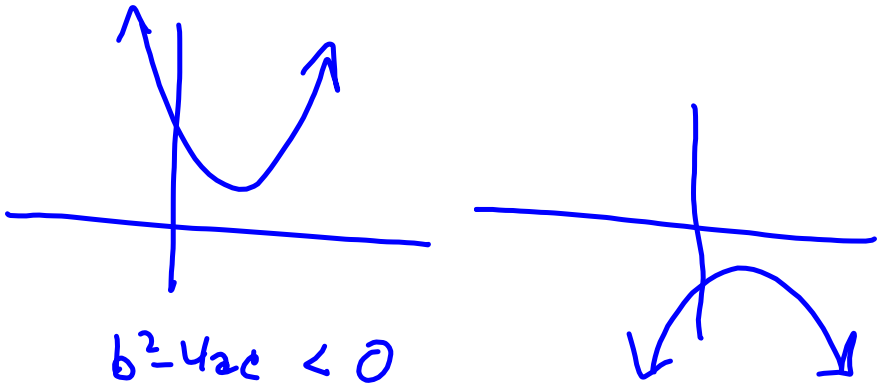
$\Rightarrow x \in [-7,-4] \cup [1,3]$

Rough Sketch





Chapter 2 gives $ax^2+bx+c>0$



$b^2-4ac < 0$

No real solns $ax^2+bx+c=0$

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

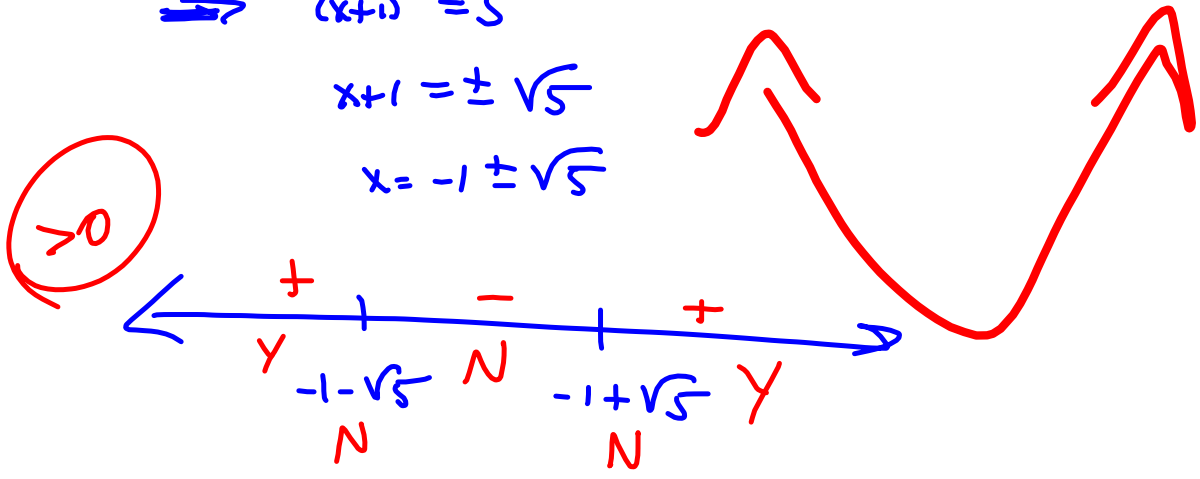
x^2+2x+1^2-1-4

$= (x+1)^2-5 \overset{SET}{=} 0$

$\Rightarrow (x+1)^2=5$

$x+1=\pm\sqrt{5}$

$x=-1\pm\sqrt{5}$



$\Rightarrow x \in (-\infty, -1-\sqrt{5}) \cup (-1+\sqrt{5}, \infty)$