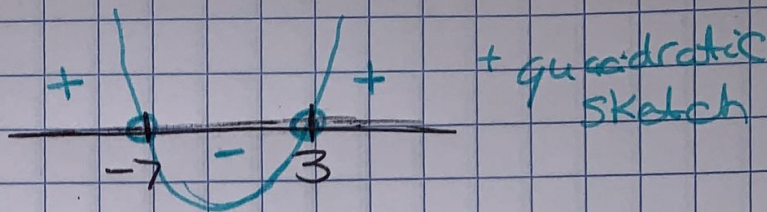


Inequalities

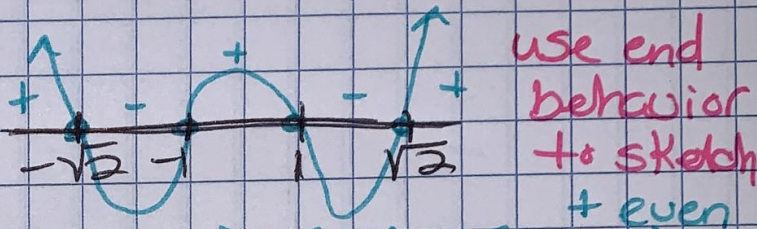
1. $x^2 + 4x + 7 < 28$
 $x^2 + 4x - 21 < 0$
 $(x+7)(x-3) < 0$
 $x+7=0 \quad x-3=0$
 $x=-7 \quad x=3$



$(-7, 3)$

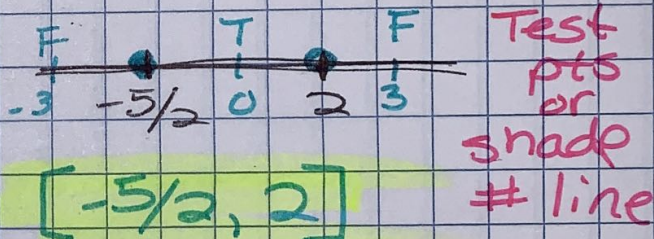
These are the zeros (x-int) of graph
 so plot on # line + test pts of sketch the graph

2. $x^4 - 3x^2 + 2 \geq 0$
 $(x^2 - 2)(x^2 - 1) \geq 0$
 $(x^2 - 2)(x+1)(x-1) \geq 0$
 $x = \pm\sqrt{2}, -1, 1$ x-int.

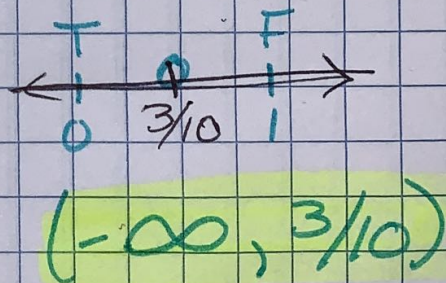


$(-\infty, -\sqrt{2}] \cup [-1, 1] \cup [\sqrt{2}, \infty)$

3. $\sqrt{2x+5} \leq 3$
 $2x+5 \geq 0$ consider domain restrictions
 $x \geq -5/2$
 $\sqrt{2x+5} \leq 3$ solve for x-int.
 $2x+5 \leq 9$
 $x \leq 2$



4. $8^{2x+1} > 4^x$
 $(2^3)^{2x+1} > (2^2)^x$ solve for x.
 $3(2x+1) > 2(x)$ No domain restrictions.
 $6x+3 > 2x$
 $3 > 4x$
 $3/4 > x$ or $x < 3/4$



5. $\frac{x^2 - 5x + 6}{x+4} \leq 0$
 $x+4 \neq 0$ Find domain restriction
 $x \neq -4$
 $\frac{x^2 - 5x + 6}{x+4} \leq 0$ Find x-intercepts
 $0 = x^2 - 5x + 6 \quad x=3$
 $0 = (x-3)(x-2) \quad x=2$

