

# Problem 2 $\Rightarrow$ Even roots !!

$$f(x) = \sqrt{x} \quad \begin{array}{l} x \geq 0 \\ [0, \infty) \end{array}$$



$$f(x) = \sqrt{2x-8}$$

$$2x-8 \geq 0$$

$$\frac{2x}{2} \geq \frac{8}{2}$$

$$x \geq 4$$

$$[4, \infty)$$



$$f(x) = \sqrt{12-4x}$$

$$12-4x \geq 0$$

$$\frac{-4x}{-4} \geq \frac{-12}{-4}$$

$$x \leq 3$$

$$(-\infty, 3]$$



$$f(x) = \frac{4x}{\sqrt{x+6}}$$

$$x+6 > 0$$

$$x > -6$$

$$(-6, \infty)$$

Can't = 0 b/c in denom.

$$f(x) = \frac{\sqrt[4]{4x-12}}{x-7}$$

$$4x-12 \geq 0$$

$$4x \geq 12$$

$$x \geq 3$$

$$[3, 7) \cup (7, \infty)$$

$$x-7 \neq 0$$

$$x \neq 7$$

$$f(x) = \frac{\sqrt{5-x}}{x^2-49}$$

$$5-x \geq 0 \Rightarrow x \leq 5$$

$$x^2-49 \neq 0$$

$$(x-7)(x+7) \neq 0$$

$$x \neq 7 \quad x \neq -7$$

$$(-\infty, 5)$$

break up!

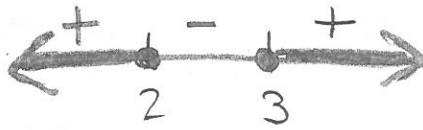
$$(-\infty, -7) \cup (-7, 5)$$

$$f(x) = \sqrt{x^2 - 5x + 6}$$

Test point  
method

$$x^2 - 5x + 6 \geq 0$$

$$(x-2)(x-3) \geq 0$$



$$(-\infty, 2] \cup [3, \infty)$$