Sheet #254:

NAME: _____

GRAPHING : HORIZONTAL SHIFT & REFLECTION

Rule of Thumb:

Reflect First, then Shift.

$$g(x) = A\,f(B(x-H)) + K.$$

IF ASKED TO GRAPH BOTH HORIZONTAL SHIFT AND REFLECTION ABOUT y-AXIS,

$$g(x) = f(-x+H) + K,$$

THEN REWRITE ...

$$g(x) = f(-(x-H)) + K$$

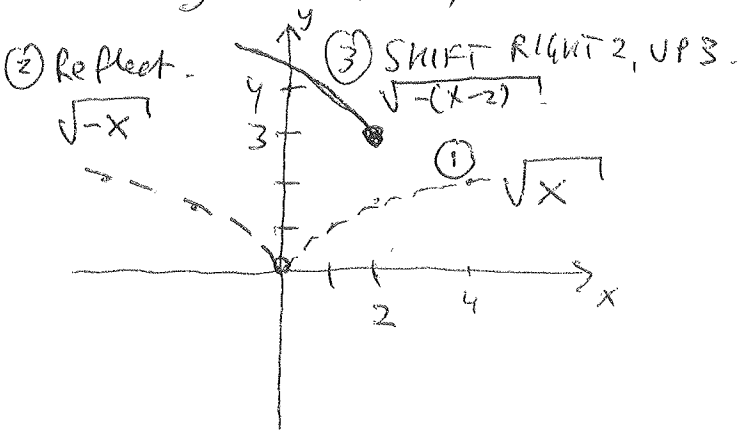
Reflect about y-axis then shift right by H and up by K.

* EXAMPLE 1.

GRAPH $g = \sqrt{-x+2} + 3$

Rewrite ...

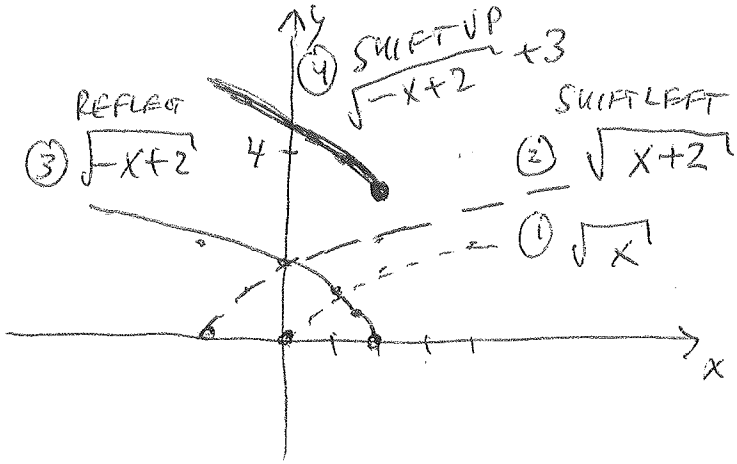
$$g = \sqrt{-(x-2)} + 3$$



Alternate Method (NOT ADVISED)

$$g(x) = f(-x+H) + K$$

SHIFT LEFT BY H
then Reflect about y-axis
then SHIFT UP BY K.



* EXAMPLE 2.

BOTH REFLECTIONS. $h(x) = -\sqrt{-x+2} + 3.$

(1) y-AXIS, (2) x-AXIS (3) SHIFT.