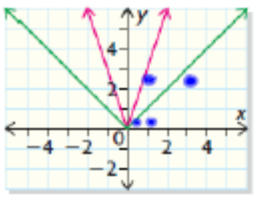
Homework: Pg.59#8 Pg.70#5b-d,8a,9a on the board. please :)

8. In each graph, one of the parent functions $f(x) = x^2$, $f(x) = \sqrt{x}$, $f(x) = \frac{1}{x}$, and $f(x) = |x|$ has undergone a transformation of the form $f(kx)$. Determine the equations of the transformed functions graphed in red.

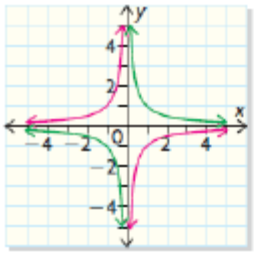
a)



$y = |x|$ $k \to 3$ factor $\to \frac{1}{3}$

$y = |3x|$

b)

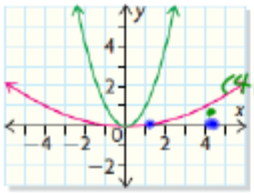


$y = \frac{1}{x}$ $k \to$ reflected in y-axis

$y = \frac{1}{-x}$

$y = -\frac{1}{x}$

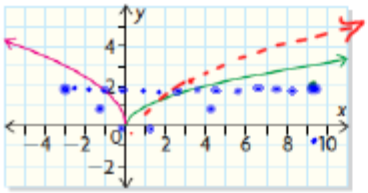
c)



$y = x^2$ $k \to \frac{1}{4}$

$y = (\frac{1}{4}x)^2$

d)



$y = \sqrt{x}$ reflected in y-axis compressed by $\frac{1}{3}$ $\therefore k \to -3$

$y = \sqrt{-3x}$