Bellwork Hon Alg 2 Wednesday, February 8, 2017

Write the equation of each transformation of the Parent Reciprocal function $y = \frac{1}{x}$

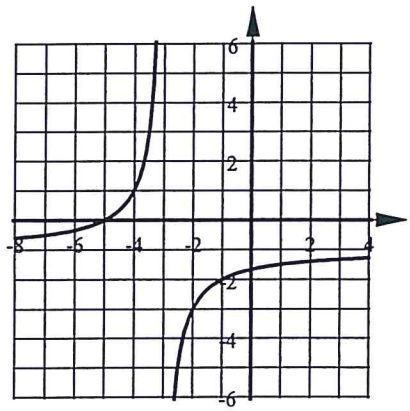
1. Moved 5 units left, twice as tall, branches are in quadrants I and III.

2. Moved 8 units up, half as tall, branches in quadrants II and IV.

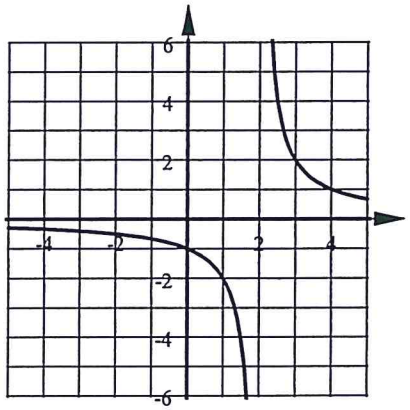
3. Moved 3 units right, 2 units down, branches are in quadrants II and IV.

4. Write the equation of each graph which is a transformation of $y = \frac{2}{x}$

a) EQ:



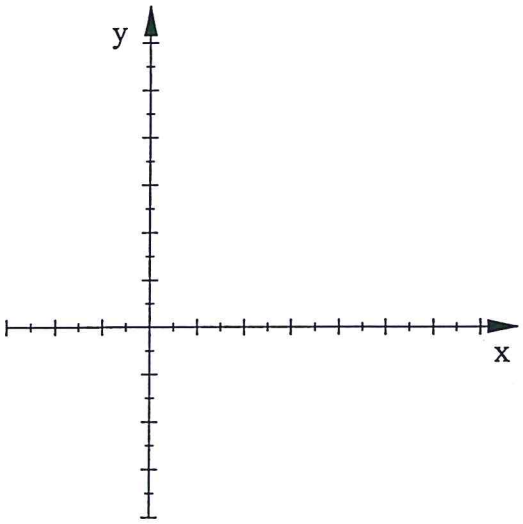
b) EQ:



5. Graph this transformation of the parent reciprocal function. Show the asymptotes as dashed lines and state the equations of the asymptotes.

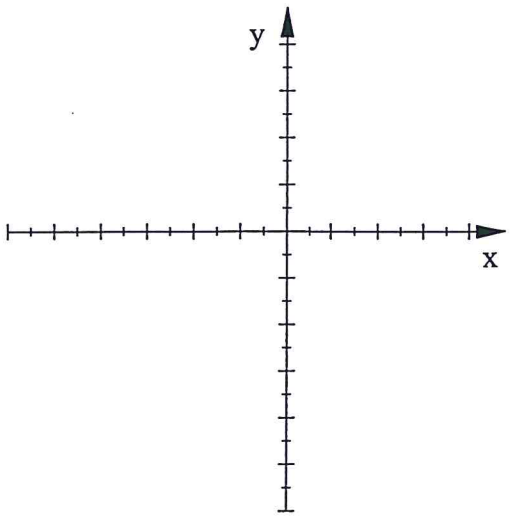
a) $y = \frac{0.2}{x-3} + 4$

HA: VA:



b) $y\frac{-15}{x+2} - 3$

HA: VA:



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Answers

Write the equation of each transformation of the Parent Reciprocal function $y = \frac{1}{x}$

1. Moved 5 units left, twice as tall, branches are in quadrants I and III.

$y = 2\left(\frac{1}{x+5}\right) = \frac{2}{x+5}$

2. Moved 8 units up, half as tall, branches in quadrants II and IV.

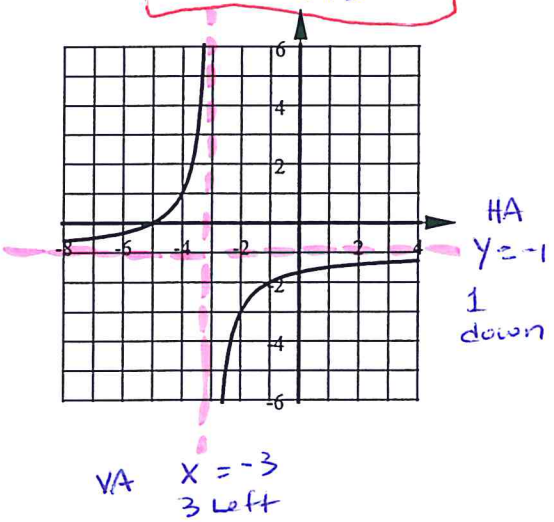
$y = -\frac{1}{2}\left(\frac{1}{x}\right) + 8$ or $\frac{-1}{2x} + 8$

3. Moved 3 units right, 2 units down, branches are in quadrants II and IV.

$y = \frac{-1}{x-3} - 2$

4. Write the equation of each graph which is a transformation of $y = \frac{2}{x}$

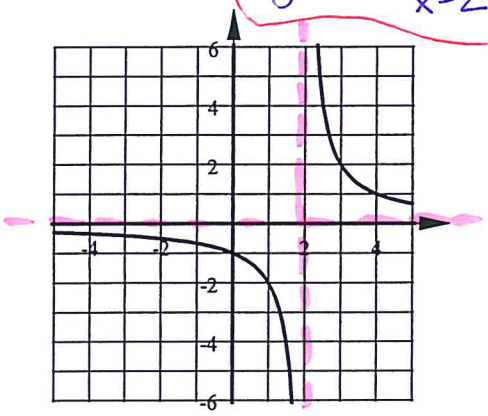
a) EQ: $y = \frac{-2}{x+3} - 1$



HA $y=-1$ 1 down

VA $x=-3$ 3 left

b) EQ: $y = \frac{2}{x-2}$



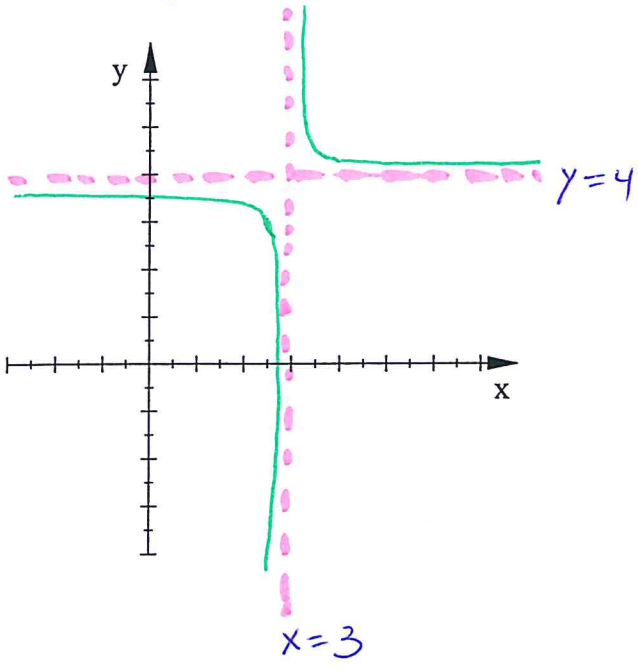
HA $y=0$ No vertical translation

VA $x=2$ 2 RIGHT

5. Graph this transformation of the parent reciprocal function. Show the asymptotes as dashed lines and state the equations of the asymptotes.

a) $y = \frac{0.2}{x-3} + 4$ 3 RIGHT 4 up close to "origin"

HA: $y=4$ VA: $x=3$



b) $y\frac{-15}{x+2} - 3$ 2 left 3 down "Far" from origin Quad II and IV

HA: $y=-3$ VA: $x=-2$