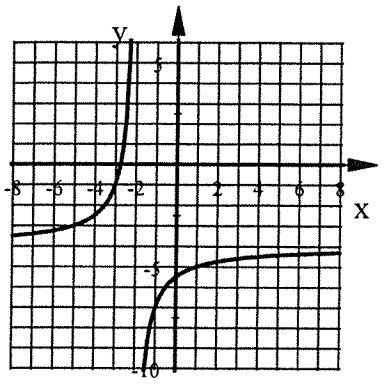
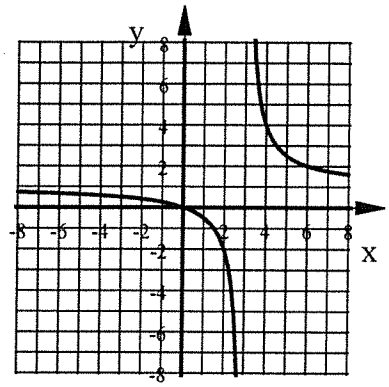
Alg 2 Topic 9/10 Quiz Review Fall 2019

1. Each graph is a transformation of the function $y = \frac{3}{x}$. Write the equation of each.

a)



b)



2. Sketch each reciprocal function. Show the asymptotes as dashed lines and state their equations.

a) $y = \frac{-50}{x-1} - 5$ b) $y = \frac{0.25}{x+4} + 3$

3. State all points of discontinuity of this rational function, if any. Then, state which are holes and which are vertical asymptotes, if any. $y = \frac{3x(x+4)(2x^2-25x+63)}{(x+4)(12x^3+24x^2-420x)}$

4. For each rational function, state the equation for the HA, if any.

a) $y = \frac{9x^2+8x-3}{2x+15}$ b) $y = \frac{8x^3+3x-10}{3x^3+4x}$ c) $y = \frac{x^2+5x+6}{2x^3-3}$

5. For each rational function, state the x and y intercepts, if any.

a) $y = \frac{x^3+3x^2-10x}{x^2-25}$ b) $y = \frac{x^2-12x+20}{x^2+9x}$ c) $y = \frac{x^2+8}{x^2-7x-8}$

6. Write the equation of each function which is a transformation of the Parent Reciprocal function $y = \frac{1}{x}$.

a) Three times taller, moved 7 units left, branches are in Quadrants II and IV.

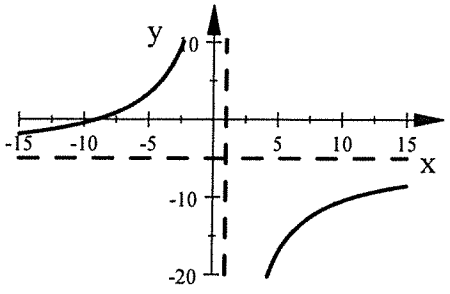
b) Moved 9 units right, 3 units up, branches are in Quadrants II and IV.

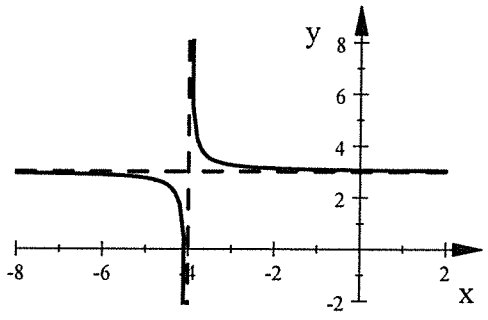
c) One-fourth as tall, moved 8 units down, branches are in Quadrants I and III.

Alg 2 Topic 9/10 Quiz Review ANSWERS Fall 2019

1. a) $y = \frac{-3}{x+2} - 4$ b) $y = \frac{3}{x-3} + 1$

2. a) HA: $y = -5$ VA: $x = 1$ b) HA: $y = 3$ VA: $x = -4$





3. $y = \frac{3x(2x-7)(x+4)(x-9)}{12x(x+4)(x-5)(x+7)}$

Points of discontinuity: $x = -7, -4, 0, 5$

Holes: $x = -4, 0$ VA: $x = -7, 5$

4. a) HA: NONE b) HA: $y = \frac{8}{3}$ c) HA: $y = 0$

5. a) x-int $= 0, 2$ y-int $= 0$ b) x-int $= 2, 10$ No y-int c) No x-int y-int $= -1$

6. a) $y = \frac{-3}{x+7}$ b) $y = \frac{-1}{x-9} + 3$ c) $y = \frac{0.25}{x} - 8$