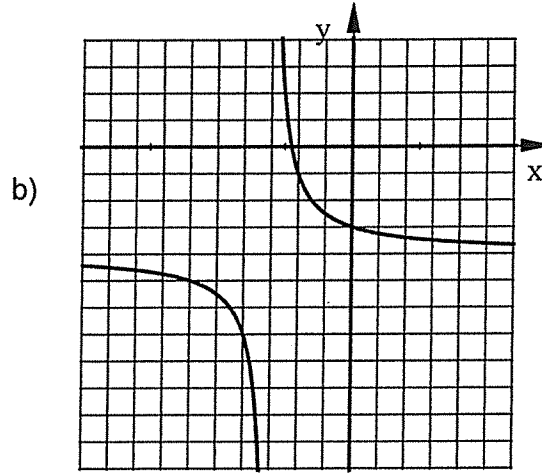
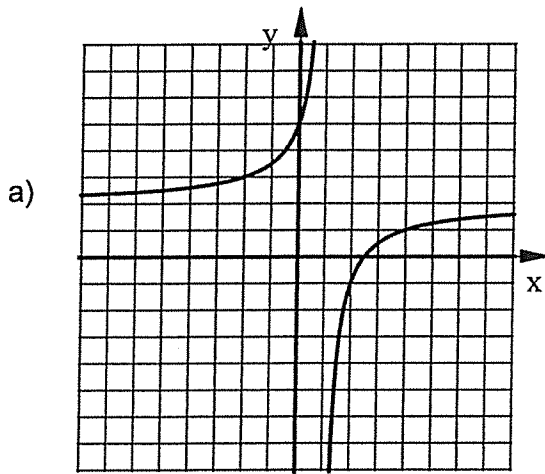


Alg 2 Quiz #2 Review Sec 9-2 to 9-4 Spring 2019

State restrictions on variables only when indicated.

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



2. Sketch the graph of each. Show asymptotes as dashed lines and state their equations.

a) $y = \frac{-20}{x-2} - 3$

b) $y = \frac{0.25}{x+5} + 2$

3. Find all points of discontinuity, if any, and classify them as either Holes or Vertical Asymptotes.

a) $y = \frac{4x^2 - 20x}{x^2 - 25}$

b) $y = \frac{x^2 - 9}{2x^3 - 2x^2 - 24x}$

c) $y = \frac{x^2 + 8x + 12}{3x^2 + 18}$

4. State the equations of the Horizontal Asymptotes, if any.

a) $y = \frac{9x^2 + 15x - 8}{3x - 4}$

b) $y = \frac{12x + 7}{2x^2 - 1}$

c) $y = \frac{10x^2 - 8x + 21}{4x^2 + 3}$

5. Find the x and y intercepts of each, if any.

a) $y = \frac{7x^2 + 10}{2x^2 - 9x - 5}$

b) $y = \frac{x^2 + 7x - 18}{x^2 - 6x}$

6. Simplify each rational expression. State restrictions on the variable.

a) $\frac{x^2 - x - 20}{x^2 - 25}$

b) $\frac{4x^4 + 16x^3 + 16x^2}{6x^3 - 24x}$

c) $\frac{2x^3 + 6x}{4x^4 - 28x^3 + 12x^2 - 84x}$

7. Find each product or quotient. Give answer in simplified form..

a) $\frac{x^2 - 9}{8x^2 + 32x - 168} \cdot \frac{4x^2 - 4x}{x^2 + 6x + 9}$

b) $\frac{6x^2 + 12x}{x^2 + 7x + 10} \cdot \frac{x^3 + 5x^2 - 4x - 20}{4x^3 - 8x^2}$

c) $\frac{x^3 - 5x^2 - 24x}{x^2 - x - 12} \div \frac{2x^2 - 16x}{4x + 20}$

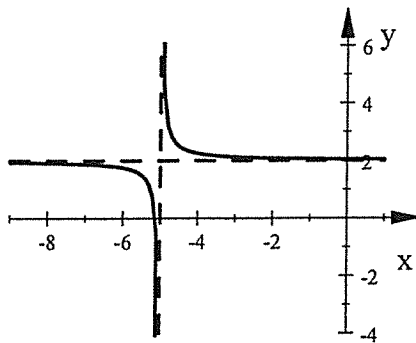
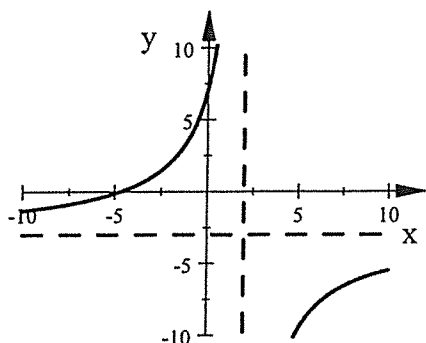
c) $\frac{x^2 + 14x + 49}{12x^3 + 108x^2 + 168x} \div \frac{x^3 - 49x}{6x^3 - 42x^2}$

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

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

2. a) HA: $y = -3$ VA: $x = 2$

b) HA: $y = 2$ VA: $x = -5$



3. a) VA: $x = -5$ Hole: $x = 5$

b) VA: $x = 0, 4$ Hole: $x = -3$

c) No pts of discontinuity.

4. a) No HA b) HA: $y = 0$ c) HA: $y = 2.5$

5. a) $x - \text{int} : \text{none}$ $y - \text{int} : -2$

b) $x - \text{int} : -9, 2$

$y - \text{int} : \text{none}$

6. a) $\frac{x+4}{x+5}$ $x \neq \pm 5$ b) $\frac{2x(x+2)}{3(x-2)}$ $x \neq 0, \pm 2$ c) $\frac{1}{2(x-7)}$ $x \neq 0, 7$

7. a) $\frac{x(x-1)}{2(x+7)(x+3)}$ b) $\frac{3(x+2)}{2x}$ c) $\frac{2(x+5)}{x-4}$ c) $\frac{1}{x(x+2)}$