Alg 2 Review Sec 9-2, 9-3, 9-6 Spring 2015

Solve each. Check for extraneous solutions.

1. $\frac{5}{x-6} - \frac{3}{x+2} = \frac{1}{x^2-4x-12}$

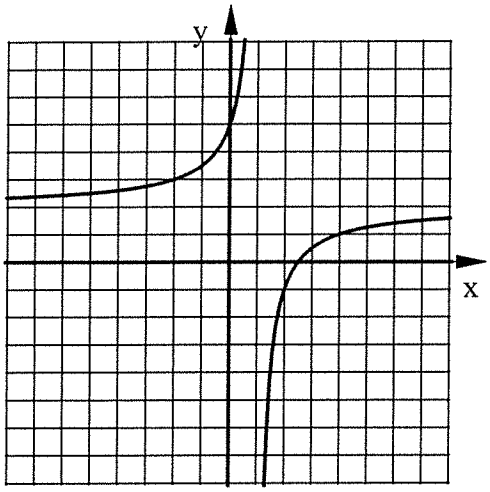
2. $\frac{11}{3x} + \frac{4}{x^2} = \frac{1}{3}$

3. $\frac{x}{x+2} = \frac{x+10}{x^2-4}$

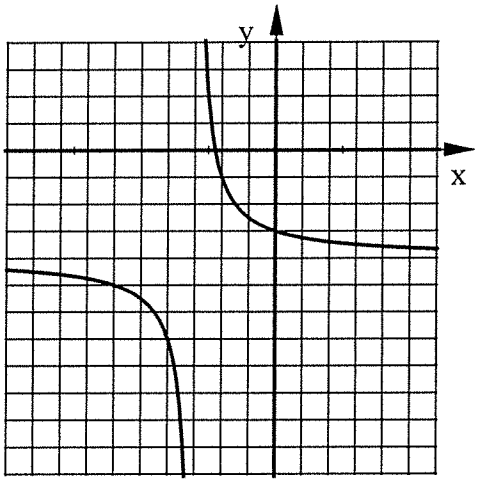
4. $\frac{3x}{x-4} + \frac{20}{x^2-3x-4} = \frac{4x}{x+1}$

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

a)



b)



6. Sketch the graph of each. State the equations of the Vertical and Horizontal Asymptotes.

a) $y = \frac{-10}{x-2} - 3$

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

7. Find all points of discontinuity and calssify them as either Holes or Vertical Asymptotes.

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

8. State the equation of the Horizontal Asymptote, if any.

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

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

c) $y = \frac{10x^2-18x+21}{4x^2+7}$

9. Graph the given rational function. Show the intercepts, the asymptotes as dashed lines, and the correct behavior around each asymptote.

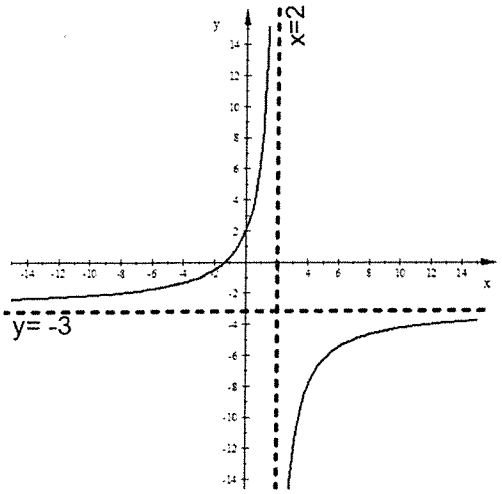
$y = \frac{(2x+1)(x-3)}{(x-5)(x+2)} = \frac{2x^2-5x-3}{x^2-3x-10}$

Alg 2 Review Sec 9-2, 9-3, 9-6 Spring 2015 ANSWERS

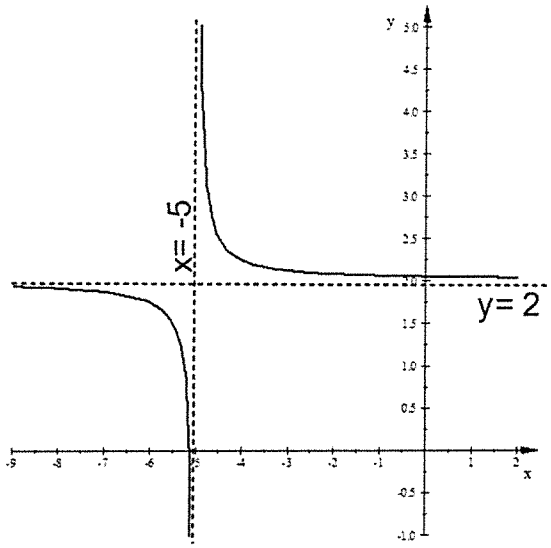
1. $x = -\frac{27}{2}$ 2. $x = -1, 12$ 3. $x = 5$ 4. $x = 20$

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

6. a)



b)



7. VA: $x = -5$ Hole: $x = 5$

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

9. $x - int = -\frac{1}{2}, 3$ $y - int = \frac{3}{10}$ $HA : y = 2$ $VA : x = 5, -2$

Graph: