Math-3 HW #3-5 (reciprocal function)

Date_____ Period____

1) $f(x) = \dfrac{3x - 9}{x - 4}$

a) Write the equation as quotient plus remainder over divisor
b) Vertical Asymptote?
c) Horizontal Asymptote?
d) x-intercept?

2) $f(x) = \dfrac{8x}{4x + 3}$

a) Write the equation as quotient plus remainder over divisor
b) Vertical Asymptote?
c) Horizontal Asymptote?
d) x-intercept?

3) $f(x) = \dfrac{x^2 + 8x - 20}{-x + 4}$

a) Rewrite the equation as a linear function
(w/ remainder over divisor)
b) The quotient (not the remainder) determines
end-behavor. What is the equation that describes
the end-behavior?
c) What are the x-intercepts? (Write as x-y pairs)
d) What is the vertical asymptote?

4) $f(x) = \dfrac{4x^2 - x}{x - 3}$

a) Rewrite the equation as a linear function (w/ remainder over divisor)
b) The quotient (not the remainder) determines end-behavor. Write the equation that describes the end behavior.
c) What are the x-intercepts? (Write as x-y pairs)
d) What is the vertical asymptote?

5) $f(x) = \dfrac{8x + 3}{-4x + 12}$

a) Write the equation as quotient plus remainder over divisor.
b) Vertical Asymptote?
c) Horizontal Asymptote?
d) x-intercept?

6) $y = \dfrac{4x - 3}{x - 4}$

a) Write the equation as quotient plus remainder over divisor.
b) Vertical Asymptote?
c) Horizontal Asymptote?
d) x-intercept?

7) $y = \dfrac{2x - 5}{x + 2}$

a) equation in standard reciprocal form?
b) Vertical Asymptote?
c) Horizontal Asymptote?
d) x-intercept?

8) Given the equation: $y = \dfrac{1}{x - 1} - 2$:

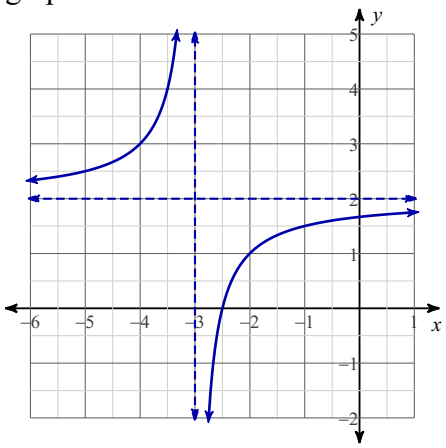
a) what is the horizontal asymptote?

b) what is the vertical asymptote?
c) what is the domain?
d) what is the range?

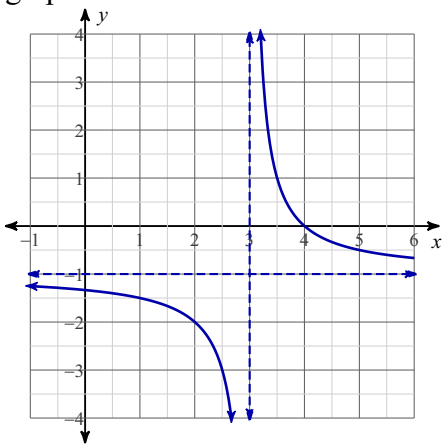
9) Given the equation: $y = \dfrac{5}{x + 3} + 4$:

a) what is the horizontal asymptote?
b) what is the vertical asymptote?
c) what is the domain?
d) what is the range?

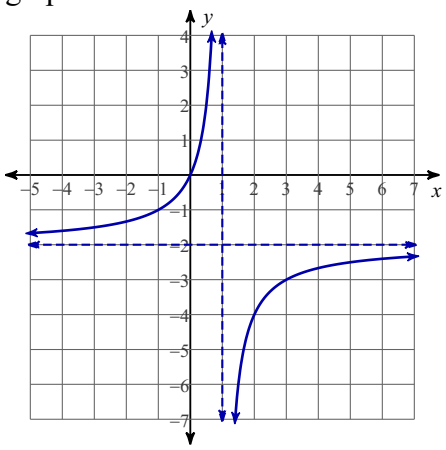
10) The following is a transformation of the function: $y = \dfrac{1}{x}$. What is the equation of the graph?



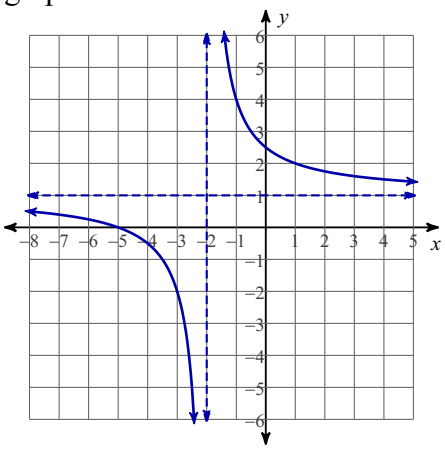
11) The following is a transformation of the function: $y = \dfrac{1}{x}$. What is the equation of the graph?



12) The following is a transformation of the function: $y = \frac{1}{x}$. What is the equation of the graph?



13) The following is a transformation of the function: $y = \frac{1}{x}$. What is the equation of the graph?



Lesson 3-3 and 3-4 Review

14) $\frac{4x}{2x^2y} + \frac{5x}{3xy^2}$

15) $\frac{3}{x-2} + \frac{2}{x+1}$

16) $\frac{\frac{x}{2} + \frac{2}{x}}{\frac{5}{4}}$

17) $\frac{8x+8}{5x^2} \cdot \frac{5x^2}{3x}$