

**Graphing, Multiplying, and Dividing Rational Expressions**  
**(8.2, 8.4) Review**

Name: \_\_\_\_\_

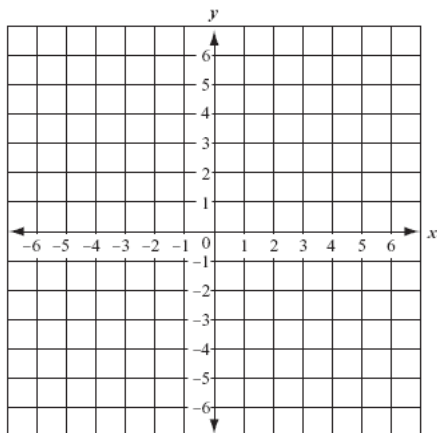
*Advanced Algebra with Trigonometry, Glawe*

Sketch the asymptotes and graph the rational function. Identify the vertical asymptote and horizontal asymptote, and state the domain/range. Plot a *minimum* of two points on each branch.

1)  $y = \frac{4}{x} + 1$

V.A. \_\_\_\_\_

H.A. \_\_\_\_\_



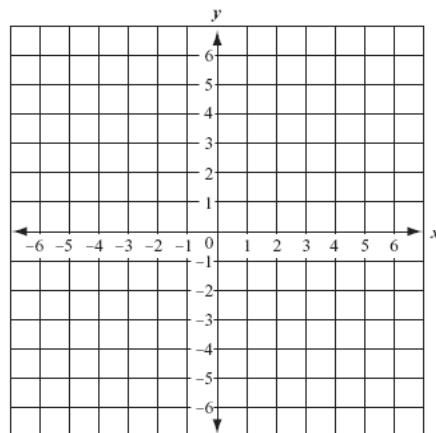
Domain: \_\_\_\_\_

Range: \_\_\_\_\_

2)  $y = \frac{5}{x+1} - 2$

V.A. \_\_\_\_\_

H.A. \_\_\_\_\_



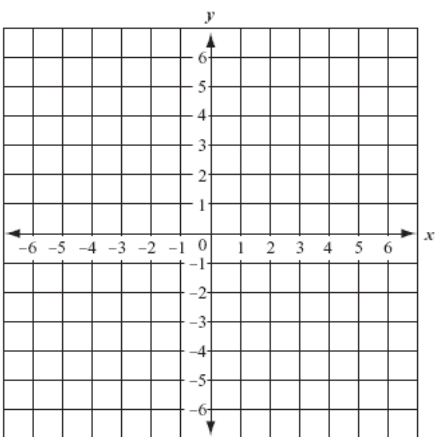
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3)  $y = \frac{4x-1}{2x+2}$

V.A. \_\_\_\_\_

H.A. \_\_\_\_\_



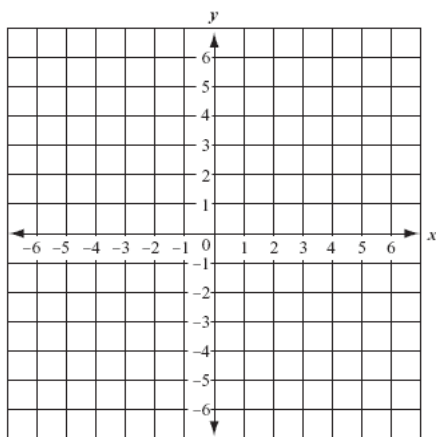
Domain: \_\_\_\_\_

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4)  $y = \frac{3x-1}{2x-6}$

V.A. \_\_\_\_\_

H.A. \_\_\_\_\_



Domain: \_\_\_\_\_

Range: \_\_\_\_\_

5) Write a rational function that has the asymptote of  $y = 4$ .

6) Write a rational function that has the asymptote of  $x = 6$ .

Perform the indicated operation and/or simplify.

$$7) \frac{8x^3+27}{6x^2+7x-3}$$

$$8) \frac{3x^4y}{4xy^3} \cdot \frac{8x^3y^2}{2x^4y^4}$$

$$9) \frac{x^2+x-30}{x^2-5x} \div (x^2-36)$$

$$10) \frac{x^2-2x-3}{2x-4} \cdot \frac{4x^2+18x-10}{x^2+6x+5}$$