

Chapter 9 Review B plus p. 539 # 57, 59 - ASSIGNMENT # _____

Solve each question. Round your answer to the nearest hundredth.

- 1) Working alone, Lisa can pick forty bushels of apples in 8 hours. Brenda can pick the same amount in 11 hours. How long would it take them if they worked together?
- 2) Working together, Kathryn and Wilbur can pick forty bushels of apples in 6.46 hours. Had he done it alone it would have taken Wilbur 14 hours. How long would it take Kathryn to do it alone?
- 3) Mrs. A has a total of \$3,000 invested in two stocks. Stock A pays dividends at the rate of 6% and stock B at the rate of 8%. If her dividends from the two stocks total \$220 per year, how much did she invest in each stock?
- 4) What is the price per oz of walnuts if 4 oz were mixed with 1 oz of peanuts which cost \$10/oz to make 5 oz of mixed nuts which cost \$6/oz?
- 5) A boat traveled 210 miles downstream and back. The trip downstream took 10 hours. The trip back took 70 hours. What is the speed of the boat in still water? What is the speed of the current?
- 6) The rate of the current in the river is 4 km/h. If a canoeist can paddle 5 km downstream in the same amount of time that she can paddle 1 km upstream, how fast can she paddle in still water?
- 7) Phil can paint the garage in 12 h, and Rick can do it in 10 h. They work together for 3h. How long will it take Rick to finish the job alone?
- 8) A chemist wishes to mix some pure acid with some water to produce 16 L of a solution that is 30% acid. How much pure acid and how much water should be mixed?

Simplify each expression.

$$9) \frac{\frac{1}{x} - \frac{4}{3}}{\frac{3}{4} + \frac{25}{3}}$$

$$10) \frac{k+10}{k^2+4k-60}$$

Solve each equation. Remember to check for extraneous solutions.

$$11) \frac{3v+6}{v^2-4} = \frac{v+1}{v-2}$$

$$12) \frac{x^2-6x+8}{x^2-11x+24} = 1 + \frac{x-8}{x-3}$$

Simplify each expression.

$$13) \frac{8}{3} + \frac{6a}{9a^2+81a+72}$$

$$14) \frac{5k^2}{30k^3+50k^2} \div \frac{45k-36}{15k^2+13k-20}$$

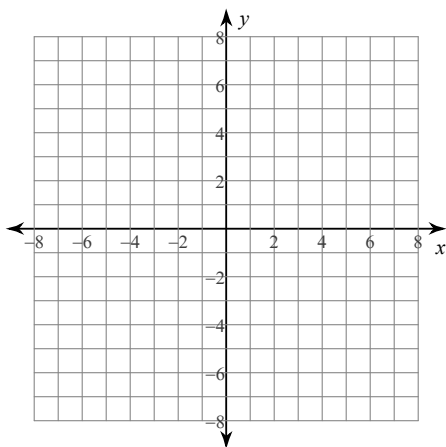
Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

$$15) \frac{(u^2v^0)^{-\frac{3}{2}} \left(\frac{4}{v^3}\right)^{-3}}{u^{\frac{4}{3}}}$$

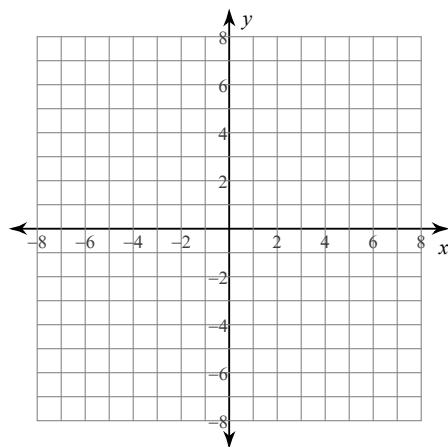
$$16) \frac{x^2y^{-\frac{1}{3}} \cdot x^{-2}y^{\frac{5}{3}}}{\left(\frac{7}{y^4}\right)^{-2}}$$

Identify the vertical asymptotes, x-intercepts, horizontal asymptote, domain, and range of each. Then sketch the graph.

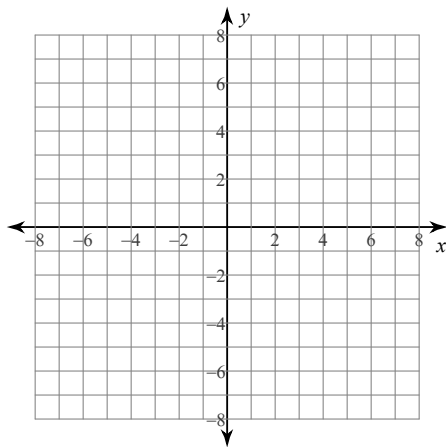
17) $f(x) = -\frac{1}{x-2} + 2$



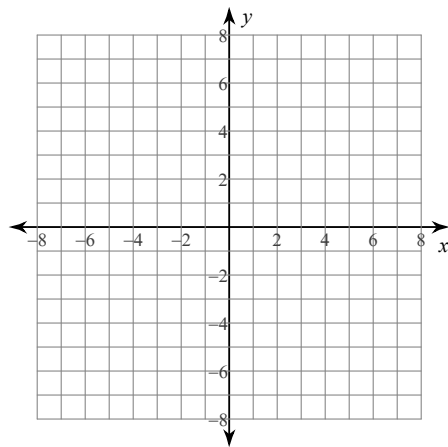
18) $f(x) = \frac{1}{x+2}$



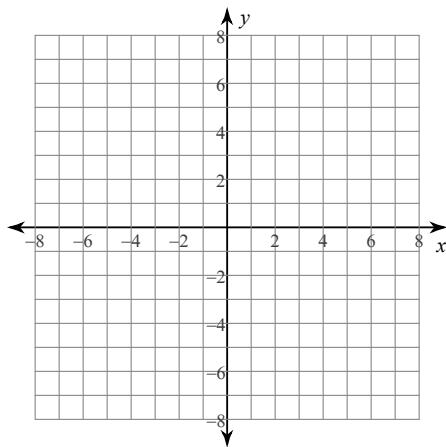
19) $f(x) = \frac{x+3}{2x+8}$



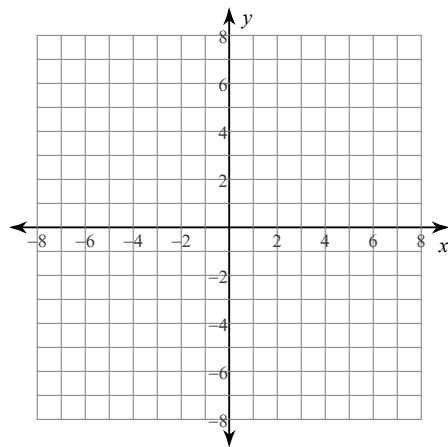
20) $f(x) = \frac{x^3 + x^2 - 12x}{2x^2 + 2x - 4}$



21) $f(x) = \frac{4}{x^2 + 2x - 3}$



22) $f(x) = \frac{x^2 + 2x - 8}{4x + 12}$



Answers to Chapter 9 Review B plus p. 539 # 57, 59 - ASSIGNMENT # _____

1) 4.63 hours

2) 11.99 hours

3) \$1000, \$2000

4) \$5/oz

5) Boat 6 mi/h; current 4.5 mi/h

6) 6 km/h

7) 4.5 h

8) 4.8 L of acid, 11.2 L of water

9) $\frac{12 - 16x}{109x}$

10) $\frac{1}{k - 6}$

11) no solution

12) $\{5, 16\}$

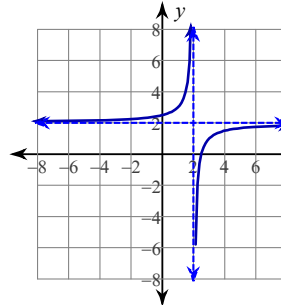
13) $\frac{8a^2 + 74a + 64}{3(a + 1)(a + 8)}$

14) $\frac{1}{18}$

15) $\frac{\sqrt[3]{u^2}}{u^5 v^4}$

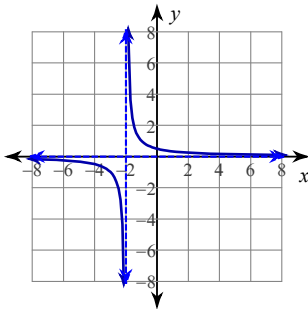
16) $y^{\frac{29}{6}}$

17)



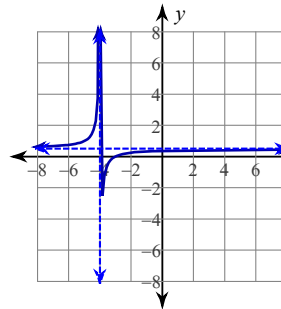
Vertical Asym.: $x = 2$
 Horz. Asym.: $y = 2$
 X-intercepts: $\frac{5}{2}$
 Domain:
 All reals except 2
 Range:
 All reals except 2

18)



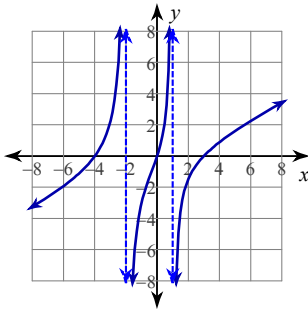
Vertical Asym.: $x = -2$
 Horz. Asym.: $y = 0$
 X-intercepts: None
 Domain:
 All reals except -2
 Range:
 All reals except 0

19)



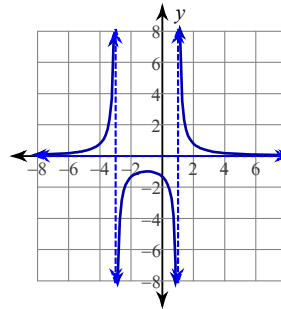
Vertical Asym.: $x = -4$
 Horz. Asym.: $y = \frac{1}{2}$
 X-intercepts: -3
 Domain:
 All reals except -4
 Range:
 All reals except $\frac{1}{2}$

20)



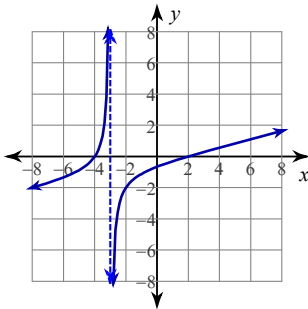
Vertical Asym.: $x = -2, x = 1$
 Horz. Asym.: None
 X-intercepts: $0, -4, 3$
 Domain:
 All reals except $-2, 1$
 Range:
 All reals except 1

21)



Vertical Asym.: $x = -3, x = 1$
 Horz. Asym.: $y = 0$
 X-intercepts: None
 Domain:
 All reals except $-3, 1$
 Range:
 All reals except 0

22)



Vertical Asym.: $x = -3$
 Horz. Asym.: None
 X-intercepts: $-4, 2$
 Domain:
 All reals except -3
 Range:
 All reals except -3