Algebra 2/Trig Honors Name_____

Chapter 9 Review A plus p. 553 # 1 - 6. ASSIGNMENT # ___

1) For her birthday party Jenny mixed together 8 gal. of Brand A fruit punch and 2 gal. of Brand B. Brand A contains 46% fruit juice and Brand B contains 16% fruit juice. What percent of the mixture is fruit juice?

2) Micaela wants to make a 5% sugar solution. She has already poured 3 gal. of pure water into a beaker. How many gal. of a 20% sugar solution must she add to this to create the desired mixture?

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

3) Scott can harvest a field in 16 hours. Lea can harvest the same field in 8 hours. If they worked together how long would it take them?

4) Working together, Amanda and Jenny can pick forty bushels of apples in 4.8 hours. Had she done it alone it would have taken Jenny 12 hours. Find how long it would take Amanda to do it alone.

5) You invest $40,000 to start a nacho stand in a shopping mall. You can make each basket of nachos for $0.70. How many baskets must you sell before your average cost per basket is $1.50?

6) Rex can fill his swimming poolin 3 hours or empty it in 10 hours. How long would it take to fill the pool if he accidentally leaves the drain open at the same time?

7) A duck can fly 2400 m in 10 min with the wind. Against the wind, it can fly only two thirds of this distance in 10 min. What is the rate of the wind?

8) A motorboat has a four-hour supply of gasoline. How far from the marina can it travel if the speed of the boat is 25 mi/h and the speed of the current 5 mi/h?

Simplify each expression.

9) $\dfrac{\dfrac{5}{a-4}}{\dfrac{a^2}{a-4}+\dfrac{25}{a-4}}$

10) $\dfrac{21n}{14n+70}$

Solve each equation. Remember to check for extraneous solutions.

11) $1=\dfrac{a-8}{a}+\dfrac{5}{a^2-2a}$

12) $\dfrac{3n+2}{n+1}=2-\dfrac{2n+3}{n+1}$

Simplify each expression.

13) $\dfrac{4}{7p^2-57p+8}-\dfrac{7}{5p}$

14) $\dfrac{4}{2n^3+12n^2}-\dfrac{5}{n+6}$

15) $\dfrac{4r^2+8r-5}{18r-9}\cdot\dfrac{45r^2}{2r+5}$

16) $\dfrac{35x^2-54x+7}{49x^2-63x+8}\div\dfrac{30x^2-42x}{49x-56}$

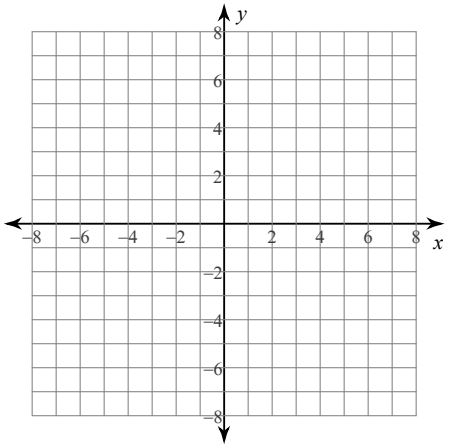
Simplify. Your answer should contain only positive exponents with no fractional exponents in the denominator.

17) $\dfrac{x\cdot yx^{-\frac{7}{4}}x^0y^{\frac{2}{3}}}{\left(x^{-\frac{1}{2}}y^{\frac{2}{3}}\right)^{-1}}$

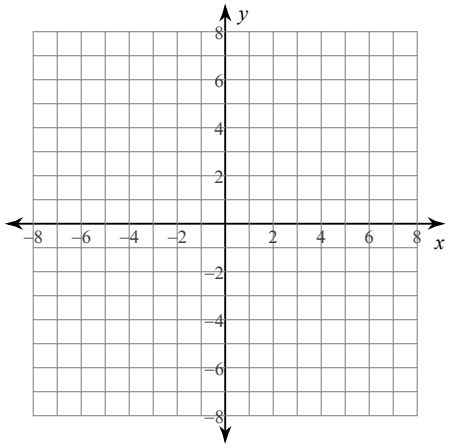
18) $\dfrac{\left(x^{-1}y^{\frac{3}{2}}\right)^{\frac{4}{3}}}{xy^{\frac{4}{3}}x^2y^{-1}x^{\frac{4}{3}}y^4}$

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

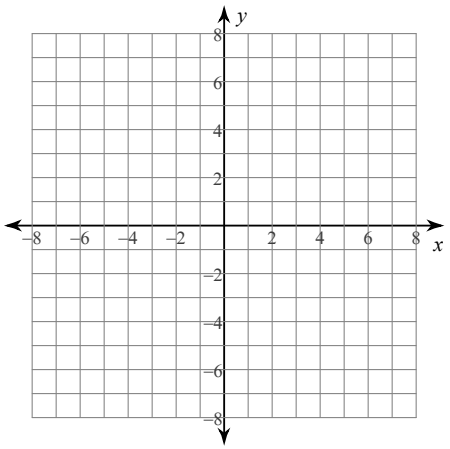
19) $f(x) = \dfrac{x^2 - 4x + 3}{-3x + 12}$



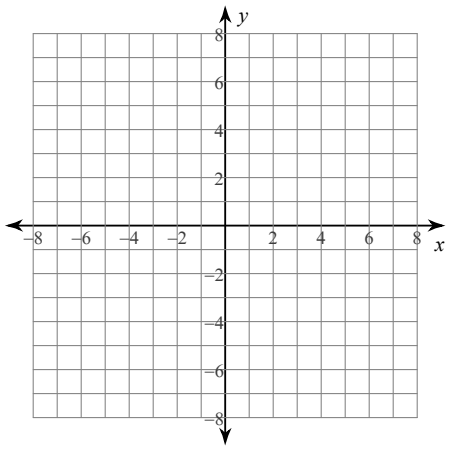
20) $f(x) = \dfrac{x^2 - 7x + 12}{4x^2 - 4x - 8}$



21) $f(x) = \dfrac{x - 2}{x^2 + x - 2}$

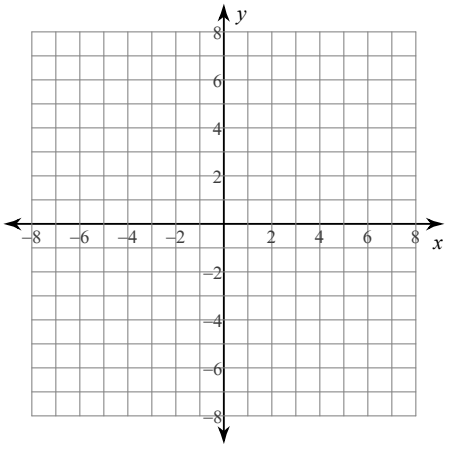


22) $f(x) = \dfrac{2x^2 - 4x}{x^2 + 2x - 3}$

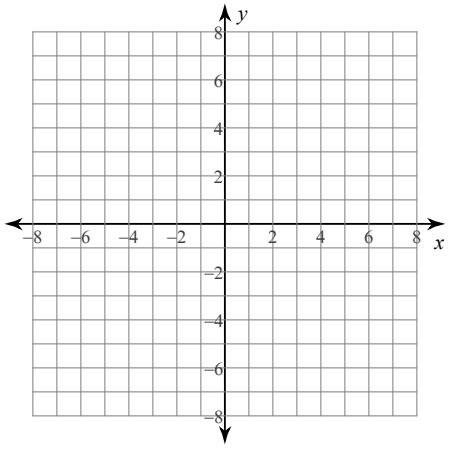


Identify the vertical asymptotes, x-intercepts, horizontal asymptote, domain, and range of each. Then sketch the graph.

23) $f(x) = -\dfrac{4}{x + 1}$



24) $f(x) = \dfrac{3}{x + 2} + 1$



Answers to Chapter 9 Review A plus p. 553 # 1 - 6. ASSIGNMENT # ___

1) 40%

2) 1 gal.

3) 5.33 hours

4) 8 hours

5) 50,000 baskets

6) $4\frac{2}{7}$ hours

7) 40m / min

8) 48 miles

9) $\dfrac{5}{a^2+25}$

10) $\dfrac{3n}{2(n+5)}$

11) $\left\{\dfrac{21}{8}\right\}$

12) no solution

13) $\dfrac{419p-49p^2-56}{5p(7p-1)(p-8)}$

14) $\dfrac{2-5n^2}{n^2(n+6)}$

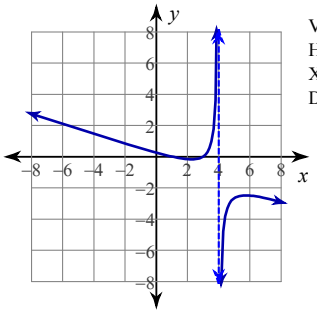
15) $5r^2$

16) $\dfrac{7}{6x}$

17) $y^2 \cdot \dfrac{\sqrt[12]{x^9y^4}}{x^2}$

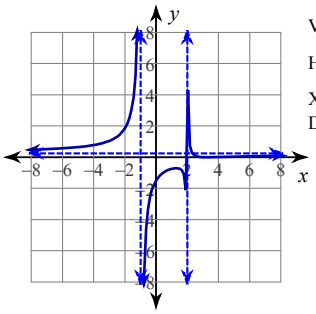
18) $\dfrac{\sqrt[3]{xy^2}}{x^6y^3}$

19)



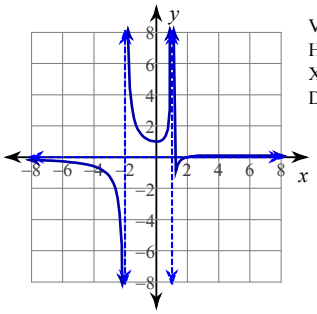
Vertical Asym.: $x = 4$
Horz. Asym.: None
X-intercepts: 1, 3
Domain:
All reals except 4

20)



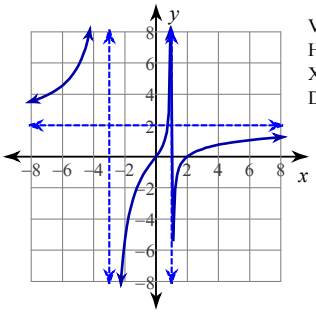
Vertical Asym.: $x = -1$, $x = 2$
Horz. Asym.: $y = \frac{1}{4}$
X-intercepts: 3, 4
Domain:
All reals except -1, 2

21)



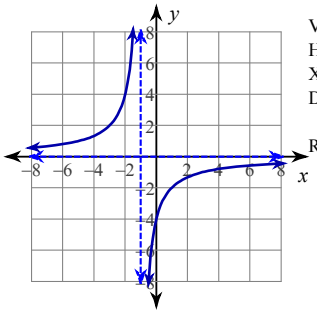
Vertical Asym.: $x = -2$, $x = 1$
Horz. Asym.: $y = 0$
X-intercepts: 2
Domain:
All reals except -2, 1

22)



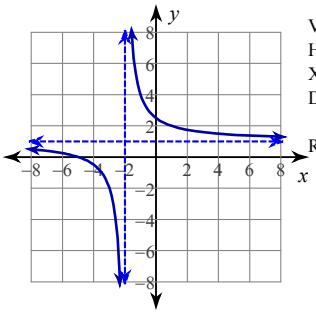
Vertical Asym.: $x = -3$, $x = 1$
Horz. Asym.: $y = 2$
X-intercepts: 0, 2
Domain:
All reals except -3, 1

23)



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

24)



Vertical Asym.: $x = -2$
Horz. Asym.: $y = 1$
X-intercepts: -5
Domain:
All reals except -2
Range:
All reals except 1