Algebra 1 (H) Name_____ ID: 1

Ch. 11 Review Questions

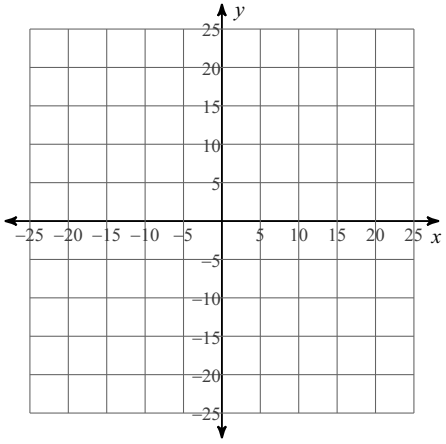
Date_____ Period____

SHOW ALL WORK. USE ADDITIONAL PAPER IF NEEDED. DUE THURSDAY 5/5.

1) Assume that y varies inversely as x. If $y = \frac{3}{2}$ when $x = 6$, find y when $x = -16$.

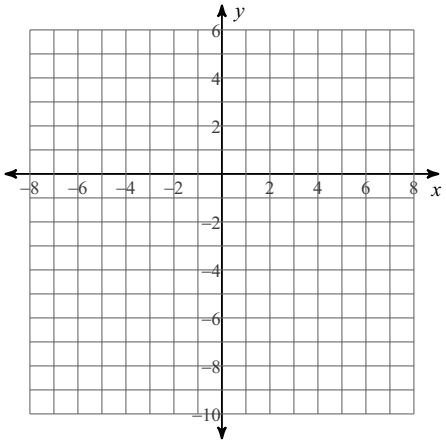
2) A 135-lb person sits 5 feet from the center of a seesaw. How far from the center should a 108-lb person sit to balance the seesaw?

3) Write and graph the inverse variation equation that relates x and y, if $y = 3$ when $x = -10$.

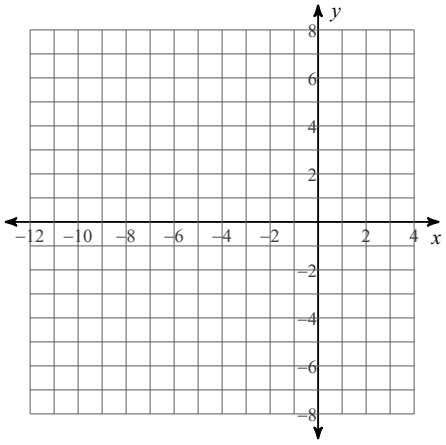


Identify the equations of the asymptotes of each function. Then sketch the graph.

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



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



Simplify each and state the excluded values.

6) $-\dfrac{28x}{8x^2}$

7) $\dfrac{81b^3}{45b^2}$

8) $\dfrac{30n-40}{60n^2}$

9) $\dfrac{27a-36}{90}$

10) $\dfrac{6x+24}{9x+30}$

11) $\dfrac{2x^2-14x+20}{9x^3-45x^2}$

12) $\dfrac{6n^3+33n^2+27n}{7n^3+6n^2-n}$

13) $\dfrac{3n^2-32n+45}{6n^3-78n^2+216n}$

Find each product or quotient and simplify each expression.

14) $\dfrac{4}{8} \div \dfrac{2}{8m}$

15) $\dfrac{7x^3}{5x} \cdot \dfrac{8}{7}$

16) $\dfrac{m-1}{m-8} \div \dfrac{(m-7)(m-1)}{(m+2)(m-8)}$

17) $\dfrac{8}{p+10} \cdot \dfrac{(p+3)(p+10)}{4(p+3)}$

18) $\dfrac{k^2+12k+35}{4} \div \dfrac{k^2+12k+35}{2k^2}$

19) $\dfrac{4v^2-8v}{v+8} \div \dfrac{4v}{10v}$

20) $\dfrac{9r+63}{27r+9} \cdot \dfrac{18r+6}{9}$

21) $\dfrac{9r+54}{6-5r-r^2} \cdot \dfrac{r-1}{35}$

Simplify.

22) $\dfrac{\dfrac{y^2+10y+24}{y^2-9}}{\dfrac{3y^2+17y-6}{2y^2-11y+15}}$

23) $\dfrac{y+9-\dfrac{6}{y+4}}{y+4+\dfrac{2}{y+1}}$

Simplify each expression.

24) $\dfrac{x+3y}{16y^2x} + \dfrac{x+3y}{16y^2x}$

25) $\dfrac{b+5}{b^2+b-12} - \dfrac{b+2}{b^2+b-12}$

26) $\dfrac{6u}{5} + \dfrac{6}{2u}$

27) $\dfrac{5}{3} + \dfrac{n-6}{n-4}$

28) $\frac{3}{p-2} - \frac{4}{p+4}$

29) $5 - \frac{5b}{b^2 - 8b + 12}$

30) $\frac{n-5}{6n+12} - \frac{4}{3}$

Solve each equation. Remember to check for extraneous solutions.

31) $\frac{1}{x} + \frac{x+3}{5x^2} = \frac{x+6}{x^2}$

32) $\frac{3}{x^2 - 5x} = \frac{1}{x-5} - \frac{1}{x^2 - 5x}$

33) $x - 1 + \frac{1}{x} = \frac{3}{x}$

34) $\frac{4}{b^2 - b} = 1 - \frac{4}{b}$

35) Find the area of a rectangle with a length of $\frac{2x^2}{y}$ and a width of $\frac{y^3}{2x}$.

36) The area of a rectangle is $x^2 + 7x + 13$. If the lenth is $x + 4$, what is the width of the rectangle?

37) Derek is decorating a model of a room that is $\frac{2x}{x+4}$ feet long and $\frac{8}{x+4}$ feet wide. What is the perimeter of the room?

38) Ana can paint a room is 6 hours. Griffin can paint a room in 4 hours. How long will it take them to paint the room while working together?