

# Bellwork: Graph # 19 on the Unit 4 Pretest

Review for Unit 4 Test

Make your 3x5 Notecard!!!

$$1) (b^5 - 12b^4 + 30b^3 + 34b^2 + 13b - 35) \div (b - 7)$$

$$\begin{array}{r}
 7 \overline{) 1 \quad -12 \quad 30 \quad 34 \quad 13 \quad -35} \\
 \underline{7 \quad -35 \quad -35 \quad -7 \quad 42} \\
 1 \quad -5 \quad -5 \quad -1 \quad 6 \quad 7
 \end{array}$$

$$\begin{array}{l}
 7 \times 1 \quad 7 \times 5 \\
 \boxed{b^4 - 5b^3 - 5b^2 - b + 6 + \frac{7}{b-7}}
 \end{array}$$

$$3) \frac{10r+50}{10r+25} = \frac{\cancel{2} \cdot 10(r+5)}{\cancel{5} \cdot (2r+5)} = \boxed{\frac{2(r+5)}{2r+5}}$$

$$5) \frac{3x^2 + 21x}{x+7} \cdot \frac{1}{9x+54}$$

$$\frac{\cancel{3}x(\cancel{x+7})}{\cancel{x+7}} \cdot \frac{1}{\cancel{9}3(x+6)} = \boxed{\frac{x}{3(x+6)}}$$

$$7) \frac{9}{p+3} \div \frac{7p^2 + 56p}{p+3} \Rightarrow$$

$$\frac{9}{\cancel{p+3}} \cdot \frac{\cancel{p+3}}{7p(p+8)}$$

$$= \boxed{\frac{9}{7p(p+8)}}$$

$$9) \frac{5p(p+3)}{p^2 - 2p - 8} - \frac{4(p-4)}{p^2 + 5p + 6}$$

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

$$\frac{5p(p+3) - 4(p-4)}{(p+3)(p-4)(p+2)}$$

LCD:  
 $(p+2)(p-4)$   
 $(p+3)$

$$5p^2 + 15p - 4p + 16 = 5p^2 + 11p + 16$$

$$\boxed{\frac{5p^2 + 11p + 16}{(p+3)(p-4)(p+2)}}$$

$$11) \frac{4x(x-3)}{x+5} - \frac{5(x+5)}{x-3}$$

LCD:  $(x+5)(x-3)$

$$\frac{4x(x-3) - 5(x+5)}{(x-3)(x+5)}$$

$$4x^2 - 12x - 5x - 25$$

$$\boxed{\frac{4x^2 - 17x - 25}{(x-3)(x+5)}}$$

Solve

$$13) \frac{2p+4}{3p^2+12p} = \frac{1}{3p} + \frac{2}{p^2+4p}$$

~~$\frac{2p+4}{3p(p+4)}$~~   ~~$\frac{1}{3p}$~~   ~~$\frac{2}{p(p+4)}$~~

LCD:  $3p(p+4)$

$p \neq 0, -4$

$$2p+4 = p+4 + 6$$

$$2p+4 = p+10$$

$$-p-4 \quad -p-4$$

$p = 6$

15)  $\frac{4}{n^2+5n} + \frac{1}{4} = \frac{n^2-5n-6}{4n^2+20n}$

~~$\frac{4}{n(n+5)}$~~   ~~$\frac{1}{4}$~~   ~~$\frac{n^2-5n-6}{4n(n+5)}$~~

LCD:  $4n(n+5)$

$n \neq -5, 0$

$$16 + n^2 + 5n = n^2 - 5n - 6$$

$$-16 - n^2 + 5n \quad -n^2 + 5n - 16$$

$$\frac{10n}{10} = \frac{-22}{10}$$

$n = -2.2$

- 17) It took a woman the same time to drive 150 miles as it takes a train to travel 250 miles. If the train is traveling 20 mi/h faster than the woman is driving, find the rate at which each is traveling.

$$t = \frac{d}{r}$$

	woman	=	train
	$\frac{(w+20)150}{w+20}$		$\frac{250w}{w+20}$

$$150w + 3000 = 250w$$

$$3000 = 100w$$

$$100 \quad 100 \rightarrow$$

$w = 30 \quad T = 50$

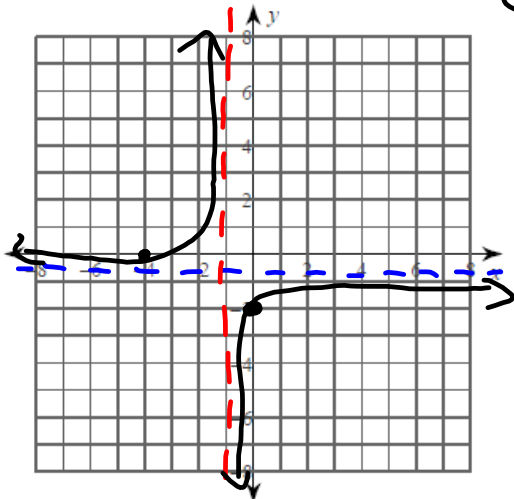
- 18) Wilma can mow the lawn in 3 hours. If Kyle helps her with another mower, the lawn can be mowed in 2 hours. How long would it take Kyle if he worked alone?

$$\frac{0}{1} y = 0 \quad \frac{1}{1} y =$$

$$19) f(x) = \frac{x+4}{-2x-2}$$

$$x\text{-int: } (-4, 0) \quad \text{vert: } x = -1$$

$$y\text{-int: } (0, -2) \quad \text{horz: } y = \frac{1}{-2}$$



$$\begin{array}{r} x+y=0 \\ -4 \quad -4 \end{array}$$

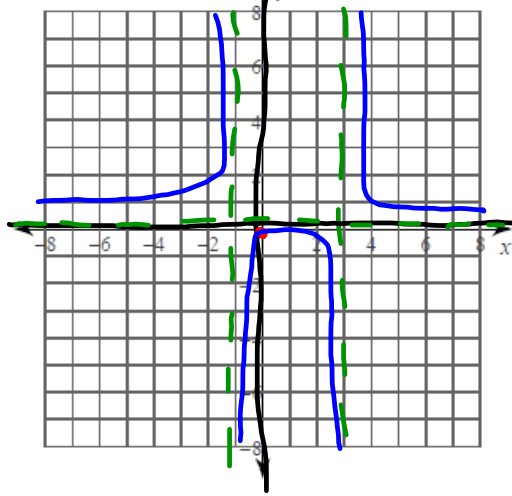
$$\frac{0+4}{0-2} = -2$$

$$\begin{array}{r} -2x-7=0 \\ \quad \quad +2 \end{array}$$

$$\begin{array}{r} -2x=7 \\ \quad \quad -2 \end{array}$$

$$\frac{1}{-2}$$

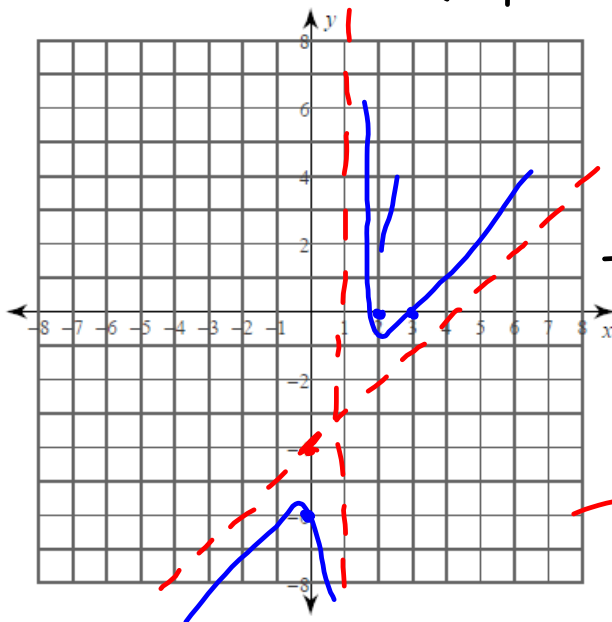
21)  $f(x) = \frac{1}{(x+1)(x-3)}$



x-int: ~~(1,0)~~ vert:  $x=3$   
 y-int:  $(0, -\frac{1}{3})$   $x=-1$

$1=0$   
 $\frac{1}{0-0-3}$   
 $x = \frac{-3}{2} = 0, -3$   
 $x + y = 0$   
 $\begin{matrix} + & - \\ 1 & -1 \end{matrix}$   
 horz:  $y=0$

23)  $\frac{x^2 - 5x + 6}{x - 1} = \frac{(x-2)(x-3)}{x-1}$



x-int:  $(2,0)(3,0)$

$x-b=0$  y-int:  $(0, -6)$   
 $x+1=0$   $\frac{0-0+6}{0-1}$   
 $\begin{matrix} + & - \\ 1 & -1 \end{matrix}$

vert:  $x=1$  horz  
 $x-1=0$   $\begin{matrix} 1 & -5 & 6 \\ \downarrow & & \\ 1 & -4 & 2 \end{matrix}$   
 $\begin{matrix} + & - \\ 1 & +1 \end{matrix}$

$y = x - 4$   
 mx + b

