

B

## Review for final semester 1 math 1

Name \_\_\_\_\_

$F(x) = 3x - 5$

$g(x) = -2x + 11$

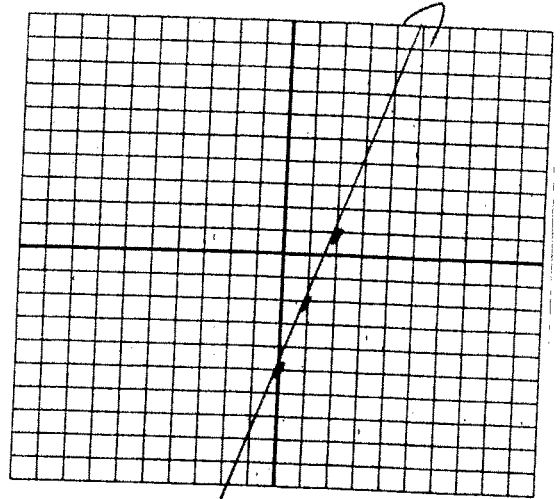
$h(x) = 6x - 2$

1) Find  $f(5)$   $f(5) = 3(5) - 5$   
 $15 - 5 = 10$

2) Find  $g(3) + h(4)$   $g(3) = -2(3) + 11 = 5$   
 $h(4) = 6(4) - 2 = 22$   
 $5 + 22 = 27$

3) Find  $g(-4) + h(-2) + f(3)$   $g(-4) = -2(-4) + 11 = 19$   
 $h(-2) = 6(-2) - 2 = -14$   
 $f(3) = 3(3) - 5 = 4$   
 $19 - 14 + 4 = 9$

4) Find  $h(3) - g(-8)$   
 $h(3) = 6(3) - 2 = 16$   
 $g(-8) = -2(-8) + 11 = 27$   
 $16 - 27 = -11$

Graph  $f(x)$ 

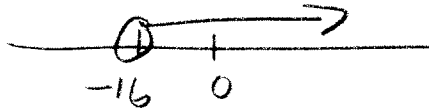
5) Solve for  $b$ ,  $\frac{3b-c}{5} = 7$   $3b - c = 35$   
 $+c \quad +c$   
 $\underline{3b = 35 + c}$   
 $b = \frac{35 + c}{3}$

6) Solve for  $z$ ,  $\frac{3z-x}{2} + 5 = 20$   
 $-5 \quad -5$   
 $\frac{3z-x}{2} = 15$   
 $3z - x = 30$   
 $+x \quad +x$   
 $\underline{3z = 30 + x}$   
 $z = \frac{30 + x}{3}$

16  
50  
5  
20

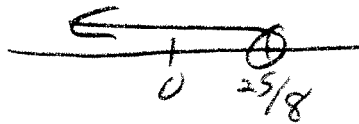
Solve the inequalities and graph the solutions on a number line

$$\begin{aligned}
 7) \quad & -5(x+6) - 10 > 40 \\
 & -5x - 30 - 10 > 40 \\
 & -5x - 40 > 40 \\
 & -5x > 80 \\
 & \frac{-5x}{-5} > \frac{80}{-5} \\
 & \{ x < -16 \}
 \end{aligned}$$



$$8) \quad 6x - 5 < -2x + 20$$

$$\begin{aligned}
 & \frac{8x}{8} < \frac{25}{8} \\
 & \{ x < 25/8 \}
 \end{aligned}$$



Given the points (4,5) and (-5,8)

9) Find the slope between the two points

$$m = \frac{8-5}{-5-4} = \frac{3}{-9} = -\frac{1}{3}$$

10) Find the equation in point slope form that goes between the two points

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

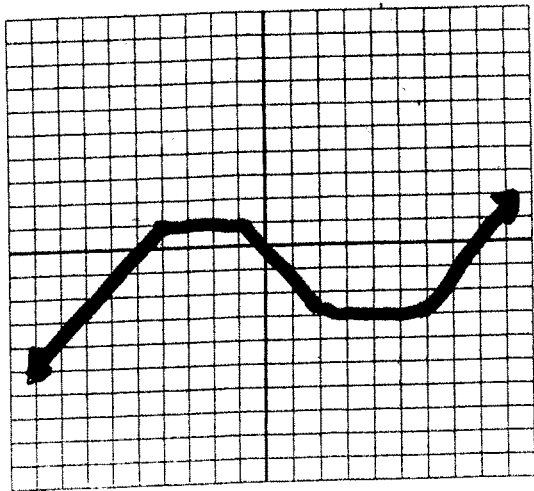
11) Change your equation to slope intercept form

$$\begin{aligned}
 y &= -\frac{1}{3}x + \frac{4}{3} + 5 \\
 y &= -\frac{1}{3}x + \frac{4}{3} + \frac{15}{3} \\
 y &= -\frac{1}{3}x + \frac{19}{3}
 \end{aligned}$$

12) Change your equation to standard form.

$$\begin{aligned}
 \frac{1}{3}x + y &= \frac{19}{3} \\
 \text{mult by } 3 & \\
 x + 3y &= 19
 \end{aligned}$$

NO frac  
NO Dec  
NO Dec A



17) Find the domain of the above graph

$$(-\infty, \infty)$$

18) On what intervals is the function increasing?

$$(-\infty, -4) \text{ and } (6, \infty)$$

19) On what intervals is the function decreasing?

$$(-4, 2)$$

20) On what interval is the function constant?

$$(-4, -2) \text{ and } (2, 6)$$

21) What is  $f(4)$ ?

$$y = -3$$

22) What is the the value of  $x$  if  $(x) = 3$

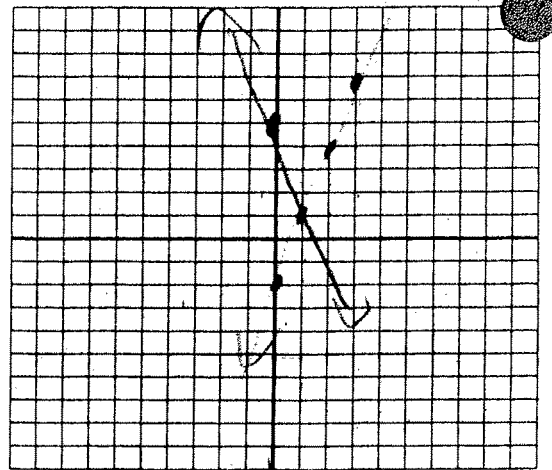
NO sol.

when  $y = 3$   
what does  $x = ?$

13) Carefully graph the following equations and find where they cross

$Y = 3x - 2$  and  $y = -4x + 5$

(1, 1)



14) Use elimination to show where the two lines crossed.

$$\begin{array}{r} -1 \left( \begin{array}{l} -3x + y = -2 \\ 4x + y = 5 \end{array} \right) \end{array}$$

$$\begin{array}{r} 3x - y = 2 \\ 4x + y = 5 \\ \hline 7x = 7 \\ x = 1 \end{array}$$

$$\begin{array}{r} -3(1) + y = -2 \\ -3 + y = -2 \\ \hline y = 1 \end{array}$$

(1, 1)

15) Without a calculator find  $\frac{5}{8} + 2\frac{3}{4}(\frac{2}{5})$

$$\frac{5}{8} + \frac{11 \cdot 2}{4 \cdot 5}$$

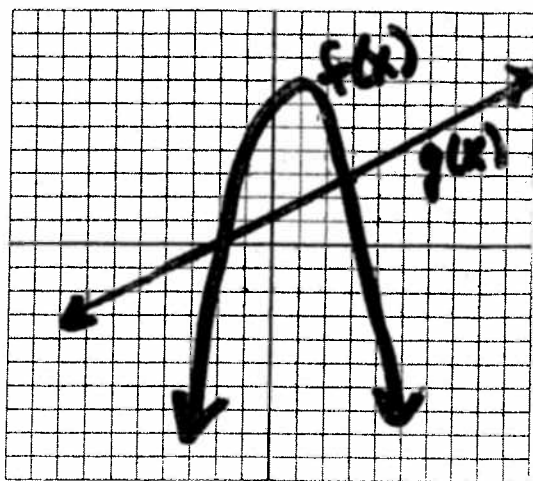
$$\frac{5}{8} + \frac{11}{10}$$

$$\frac{25}{40} + \frac{44}{40} = \frac{69}{40}$$

16) Find without a calculator  $4 + 6 \bullet 9 \div 3$

$$\begin{array}{l} 4 + 54 \div 3 \\ 4 + 18 = 22 \end{array}$$

$$\begin{array}{r} 3 \overline{)54} \\ \underline{3} \phantom{0} \\ 24 \end{array}$$



23) Where does  $f(x) = g(x)$ ?

$(-2, 0)$  and  $(3, 3)$

24)  $F(4) =$

$y = -3$

25)  $F(2) + g(3) =$

$6 + 3 = 9$

26) What value(s) of  $x$  does  $g(x) = 5$

$x = 6$

27) On what intervals is  $f(x)$  increasing and decreasing?

$(-\infty, 1)$  /  $(1, \infty)$

28) On what intervals is  $g(x)$  increasing and decreasing?

$(-\infty, \infty)$  NEVER

29) On what intervals is  $f(x) > g(x)$

$(-2, 3)$

30) On what intervals is  $g(x) > f(x)$

$(-\infty, -2)$  and  $(3, \infty)$

