Graphing Test **Name**_____

1. Define Relation: SET of ORDERED PAIRS
   What are the four ways to display a relation?
   a. SET of ORDERED PAIRS
   b. t-CHart
   c. pts PLOTED (GRAPH) DO NOT CONNECT pts
   d. MAPPING

2. Write an equation from the table.

X	Y	
-4	-13	
-2	-5	+8
0	3	+8
2	11	+8
4	19	+8
+2	+2	

$m = \frac{\Delta y}{\Delta x} x + c$

$m = \frac{8}{2} x + c$

$m = \frac{4}{1} x + c$

$3 = \frac{4}{1}(0) + c$

$3 = c$

$m = \frac{4}{1} x + 3$

3. Write an equation from the table.

X	Y	
-10	-11	
-5	-7	+4
0	-3	
5	1	
10	5	
+5		

$m = \frac{\Delta y}{\Delta x} x + c$

$m = \frac{4}{5} x + c$

$-3 = \frac{4}{5}(0) + c$

$-3 = c$

$m = \frac{4}{5} x - 3$

4. Write an equation from the table.

X	Y	
-3	18	
-1	8	-10
1	-2	-10
3	-12	-10
5	-22	
+2		

$m = \frac{\Delta y}{\Delta x} x + c$

$m = \frac{-5}{1} x + c$

$18 = \frac{-5}{1}(-3) + c$

$18 = 15 + c$

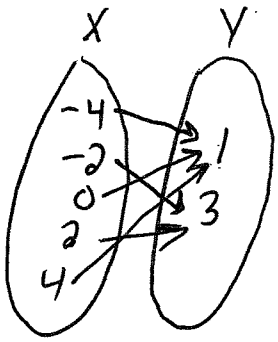
$3 = c$

$m = \frac{-5}{1} x + 3$

$m = \frac{-5}{1} x + 3$

5. Draw a **mapping** and create a **table of values** (T- Chart) for the relation.

H = {(-4 , 1) , (-2 , 3) , (0 , 1) , (2 , 3) , (4 , 1)}



X	Y
-4	1
-2	3
0	1
2	3
4	1

6a. State the domain and range for problem 5

DOMAIN $\{-4, -2, 0, 2, 4\}$

RANGE $\{1, 3\}$

6b. Is the relation a function FUNCTION

Given $f(x) = 5x - 2$ $g(x) = 2x^2 + 3x$

7. f(3) $5(3) - 2 = \boxed{13}$ 7. 13

8. g(2) $2(2)^2 + 3(2) = \boxed{14}$ 8. 14

9. f(-3) $5(-3) - 2 = \boxed{-17}$ 9. -17

10. g(-1) $2(-1)^2 + 3(-1) = 2 - 3 = \boxed{-1}$ 10. -1

11. f(0) $5(0) - 2 = \boxed{-2}$ 11. -2

12. g(7) + 3 [f(5)] 12. 188

$g(7) = 2(7)^2 + 3(7)$
$= 119$
$f(5) = 5(5) - 2$
$= 23$
$3[f(5)] = 69$
$119 + 69 = \boxed{188}$

13. f(9) – g(f(2)) 13. -109

$f(9) = 5(9) - 2$
$= 43$
$f(2) = 5(2) - 2$
$= 8$
$g(8) = 2(8)^2 + 3(8)$
150

$43 - 150$
$= -109$

Slope Intercept form equations

Solve each of these equations for y (e.g. $y = \frac{2}{3}x + 5$, or y = 7x - 5)

14. $4x + 2y = 12$ $\frac{2y}{2} = \frac{-4x}{2} + \frac{12}{2}$ 14. $y = \frac{-2}{1}x + 6$

15. $9x + 27y = 81$ $\frac{27y}{27} = \frac{-9x}{27} + \frac{81}{27}$ 15. $y = \frac{-1}{3}x + 3$

16. $6 + 11x - 5y = 9x - 3y + 4$ $\frac{-2y}{-2} = \frac{-2x}{-2} - \frac{2}{-2}$ 16. $y = \frac{1}{1}x + 1$

17. $30 - 6y = 12x$ $\frac{-6y}{-6} = \frac{12x}{-6} - \frac{30}{-6}$ 17. $y = \frac{-2}{1}x + 5$

18. $(y+3) = -\frac{2}{5}(x-10)$ $y + 3 = -\frac{2}{5}x + 4$ 18. $y = \frac{-2}{5}x + 1$

Standard Form Equation

Put each equation in the $Ax + By = C$

19. $y = \frac{2}{5}x - 3$ $-5\left[\frac{-2}{5}x + y = -3\right]$ 19. $2x - 5y = 15$

20. $y = -\frac{1}{2}x - 7$ $2\left[\frac{1}{2}x + y = -7\right]$ 20. $x + 2y = -14$

21. $(y+3) = -\frac{2}{5}(x-10)$ #18 CONVERT $5\left[\frac{2}{5}x + y = 1\right]$ 21. $2x + 5y = 5$

Write the equation in both standard and slope intercept form.

+5 1. $\langle (5,-2), (10,-3) \rangle$ -1

$y = \frac{\Delta y}{\Delta x}x + c$

$y = \frac{-1}{5}x + c$ $-1 = c$

$-3 = \frac{-1}{5}(10) + c$

$-3 = -2 + c$

Slope Int $y = \frac{-1}{5}x - 1$

-3 2. $\langle (-3,3), (-6,5) \rangle$ +2

$y = \frac{-2}{3}x + c$

$5 = \frac{-2}{3}(-6) + c$

$5 = 4 + c$

$1 = c$

Slope Int $y = \frac{-2}{3}x + 1$

(-1,3)

3. $m = \frac{-3}{4}$

$y = \frac{-3}{4}x + c$

$3 = \frac{-3}{4}(-1) + c$

$3 = \frac{3}{4} + c$

$2\frac{1}{4} = c$

$y = \frac{-3}{4}x + \frac{9}{4}$

$4\left[\frac{3}{4}x + y = \frac{9}{4}\right]$

Standard $3x + 4y = 9$

4. $(2,5)$ $m=\frac{1}{4}$

$y=\frac{1}{4}x+c$
$5=\frac{1}{4}(2)+c$
$5=\frac{1}{2}+c$
$4\frac{1}{2}=c$
$y=\frac{1}{4}x+4\frac{1}{2}$
$-4\left[\frac{-1}{4}x+y=\frac{9}{2}\right]$

Standard $x-4y=-18$

5. $(3,-7)$ $m=\frac{2}{3}$

Point Slope $(y+7)=\frac{2}{3}(x-3)$

6. $(-7,3)$ $m=-\frac{4}{5}$

Point Slope $(y-3)=\frac{-4}{5}(x+7)$

7. $(-6,-5)$ $m=\frac{5}{7}$

Point Slope $(y+5)=\frac{5}{7}(x+6)$

Write each equation in standard form

8. $y=\frac{3}{4}x-2$ $-4\left[\frac{-3}{4}x+y=-2\right]$

Standard $3x-4y=8$

9. $y=\frac{-2}{7}x+3$ $7\left[\frac{2}{7}x+y=3\right]$

Standard $2x+7y=21$

10. $(y-3)=\frac{-1}{5}(x+15)$ $y-3=\frac{-1}{5}x-5$ $5\left[\frac{1}{5}x+y=-2\right]$

Standard $x+5y=-10$

Write each equation in slope intercept form

11. $2x-5y=10$ $\frac{-5y}{-5}=\frac{-2x}{-5}+\frac{10}{-5}$ $y=\frac{2}{5}x-2$

Slope Int $y=\frac{2}{5}x-2$

12. $7x+4y=12$ $\frac{4y}{4}=\frac{-7x}{4}+\frac{12}{4}$

Slope Int $y=-\frac{7}{4}x+3$

13. $(y+11)=\frac{-1}{3}(x-21)$

$y+11=\frac{-1}{3}x+7$

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

Slope Int $y=-\frac{1}{3}x-4$

Write the slope, y intercept as an ordered pair, and x intercept as an ordered pair

14. $2x + 3y = -6$ m = $-2/3$ y - int = $(0, -2)$ x - int = $(-3, 0)$

15. $x - 5y = 15$ m = $1/5$ y - int = $(0, -3)$ x - int = $(15, 0)$

16. $y = \frac{2}{3}x - 7$ m = $2/3$ y - int = $(0, -7)$ x - int = $(10\frac{1}{2}, 0)$

$2x - 3y = 21$

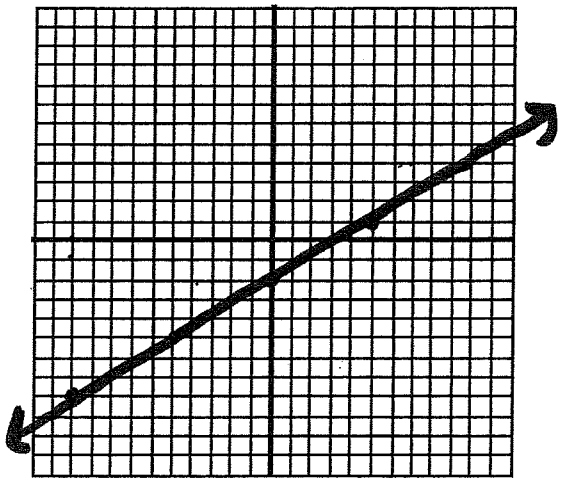
17. $y = \frac{-3}{4}x + 2$ m = $-3/4$ y - int = $(0, 2)$ x - int = $(2\frac{2}{3}, 0)$

$3x + 4y = 8$

Graph Each of the following

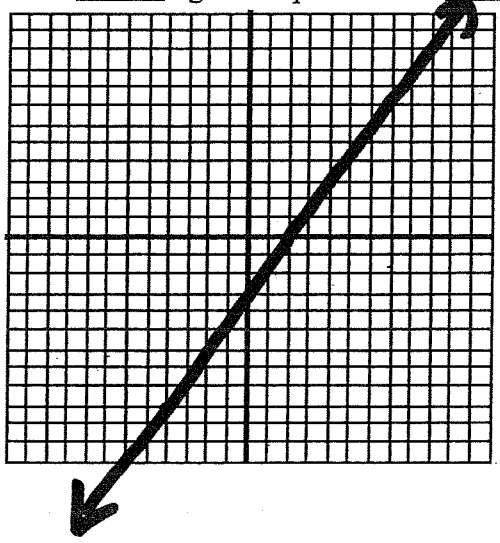
18. $y = \frac{3}{5}x - 2$ m = $3/5$ goes ~~"up or down"~~ SHALLOW INCLINE y - int = $(0, -2)$

x	y
-10	-8
-5	-5
0	-2
5	1
10	4

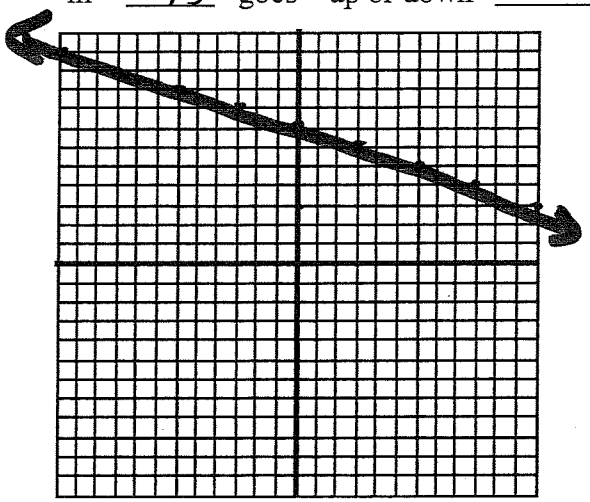


19. $3x - 2y = 6$ m = $3/2$ goes ~~"up or down"~~ STEEP INCLINE y - int = $(0, -3)$

x	y
-4	-9
-2	-6
0	-3
2	0
4	3

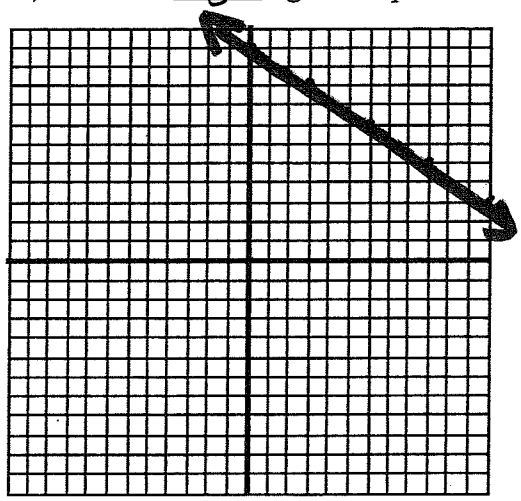


20. $y = \frac{-1}{3}x + 7$ m = $-1/3$ goes ~~"up or down"~~ SHALLOW DECLINE y - int = 0, 7



x	y
-6	9
-3	8
0	7
3	6
6	5

21. $(y-3) = \frac{-2}{3}(x-12)$ m = $\frac{-2}{3}$ goes "up or down" SHALLOW DECLINE y - int = 0, 11



x	y
-6	15
-3	13
0	11
3	9
6	7

$y - 3 = -\frac{2}{3}x + 8$

$y = -\frac{2}{3}x + 11$