Name_____

Write the equation in the **indicated form**.

1. $+3 \left\langle \begin{matrix}(3,-4)\\(6,-2)\end{matrix} \right\rangle +2$

$m = \frac{\Delta M}{\Delta x} = \frac{2}{3}$

$M = \frac{\Delta M}{\Delta x} x + C$

$M = \frac{2}{3}x + C$

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

$-2 = 4 + C$

$-6 = C$

Slope Int $M = \frac{2}{3}x - 6$

---

2. $+4 \left\langle \begin{matrix}(4,1)\\(8,4)\end{matrix} \right\rangle +3$

$m = \frac{\Delta M}{\Delta x} = \frac{3}{4}$

$Ax + BM = C$

$3x - 4M = C$

$3(4) - 4(1) = C$

$12 - 4 = C$

$8 = C$

Standard $3x - 4M = 8$

---

3. $(6,-4)$

$m = \frac{-1}{3}$

$(M - k) = m(x - h)$

$(M + 4) = -\frac{1}{3}(x - 6)$

Point Slope $(M + 4) = -\frac{1}{3}(x - 6)$

---

4. $(9,5)$

$m = \frac{5}{3}$

$M = \frac{\Delta M}{\Delta x} x + C$

$M = \frac{5}{3}x + C$

$5 = \frac{5}{3}(9) + C$

$5 = 15 + C$

$-10 = C$

Slope Int $M = \frac{5}{3}x - 10$

---

5. $(4,1)$

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

$Ax + BM = C$

$3x + 4M = C$

$3(4) + 4(1) = C$

$12 + 4 = 16$

Standard $3x + 4M = 16$

---

6. $(-2,3)$

$m = \frac{5}{2}$

$(M - k) = m(x - h)$

$(M - 3) = \frac{5}{2}(x + 2)$

Point Slope $(M - 3) = \frac{5}{2}(x + 2)$

Write each equation in **standard form**

7. $y = \frac{3}{4}x - 2$

$Ax + By = C$

$-\frac{3}{4}x + y = -2$

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

$3x - 4y = 8$

Standard $3x - 4y = 8$

8. $y = \frac{-2}{3}x + \frac{1}{3}$

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

$3\left[\frac{2}{3}x + y = \frac{1}{3}\right]$

$2x + 3y = 1$

Standard $2x + 3y = 1$

9. $y = \frac{5}{8}x + \frac{3}{8}$

$-8\left[-\frac{5}{8}x + y = \frac{3}{8}\right]$

$5x - 8y = -3$

Standard $5x - 8y = -3$

Write each equation in **slope intercept form**

10. $5x - 2y = 6$

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

$\frac{-2y}{-2} = \frac{-5x}{-2} + \frac{6}{-2}$

$y = \frac{5}{2}x - 3$

Slope Int $y = \frac{5}{2}x - 3$

11 $3x + 2y = 10$

$\frac{2y}{2} = \frac{-3x}{2} + \frac{10}{2}$

$y = -\frac{3}{2}x + 5$

Slope Int $y = -\frac{3}{2}x + 5$

12. $7x - 2y = -6$

$\frac{-2y}{-2} = \frac{-7x}{-2} + \frac{-6}{-2}$

$y = \frac{7}{2}x + 3$

Slope Int $y = \frac{7}{2}x + 3$

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

13. $2x - 3y = 12$ m = 2/3 y - int = (0, -4) x - int = (6, 0)

$y = \frac{2}{3}x - 4$

14. $4x + 5y = 20$ m = -4/5 y - int = (0, 4) x - int = (5, 0)

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

15. $x - 4y = 16$ m = 1/4 y - int = (0, -4) x - int = (16, 0)

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

16. $y = \frac{4}{5}x - 2$ m = 4/5 y - int = (0, -2) x - int = (2 1/2, 0)

$4x - 5y = 10$

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

$3x + 4y = 8$

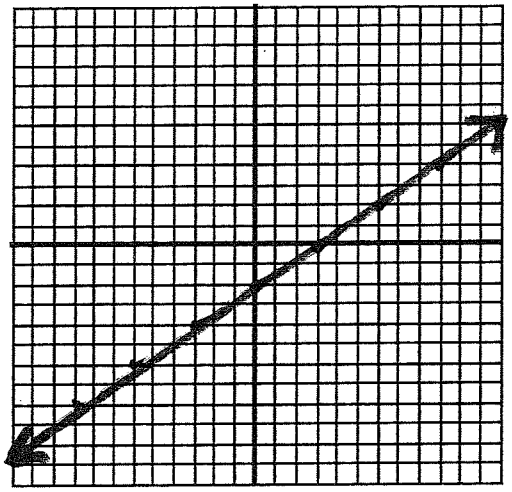
18. $y = \frac{5}{4}x - \frac{3}{4}$ m = 5/4 y - int = (0, -3/4) x - int = (3/5, 0)

$5x - 4y = 3$

Graph Each of the following

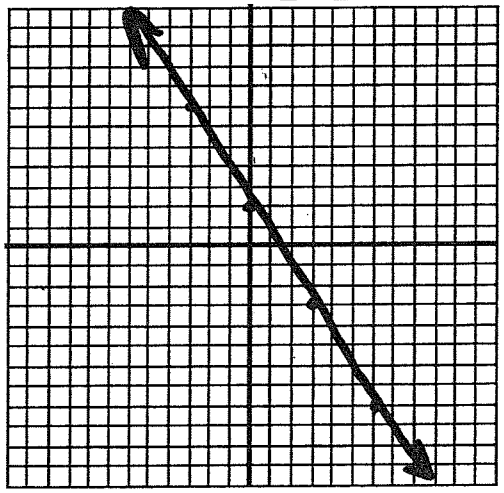
19. $y = \frac{2}{3}x - 2$ m = 2/3 *steep_or_shallow* / *incline_or_decline* SHALLOW INCLINE y - int = (0, -2)

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



20. $y = \frac{-5}{3}x + 2$ m = -5/3 *steep_or_shallow* / *incline_or_decline* STEEP DECLINE y - int = (0, 2)

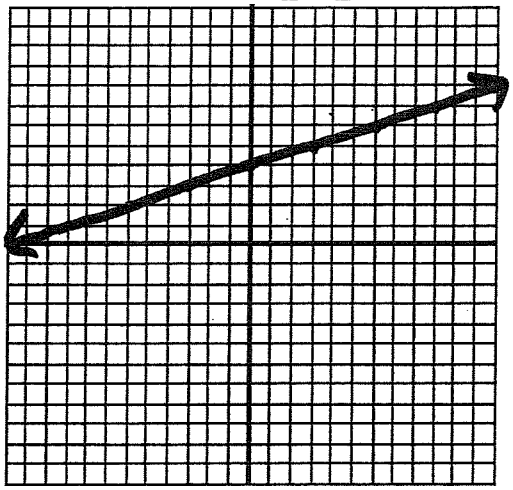
x	y
-6	12
-3	7
0	2
3	-3
6	-8



21. $y = \frac{1}{3}x + 4$

m = 1/3 (steep_or_shallow / incline_or_decline) SHALLOW INCLINE y - int = 0, 4

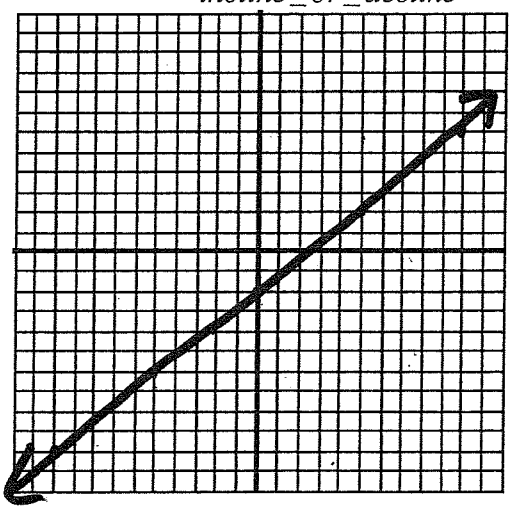
x	y
-6	2
-3	3
0	4
3	5
6	6



22. $4x - 5y = 10$

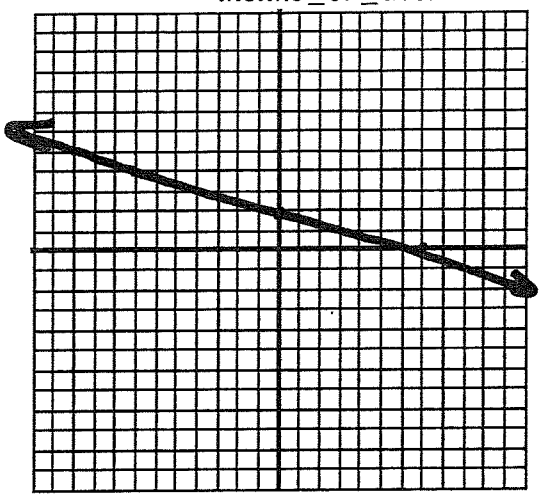
m = 4/5 (steep_or_shallow / incline_or_decline) SHALLOW INCLINE y - int = (0, -2)

x	y
-10	-10
-5	-6
0	-2
5	2
10	6



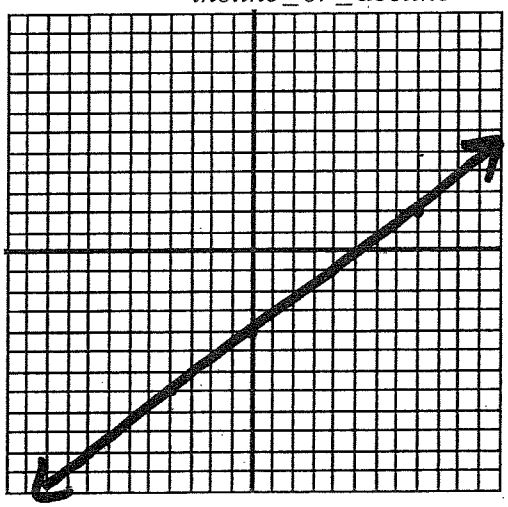
23. $2x + 7y = 14$ m = $-2/7$ *steep_or_shallow* SHALLOW *incline_or_decline* DECLINE y - int = (0, 2)

x	y
-14	6
-7	4
0	2
7	0
14	-2



24. $3x - 4y = 16$ m = $3/4$ *steep_or_shallow* SHALLOW *incline_or_decline* INCLINE y - int = (0, -4)

x	y
-8	-10
-4	-7
0	-4
4	-1
8	2



25. $(y-5)=\frac{1}{3}(4x-9)$

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

$y=\frac{4}{3}x+2$

$4x-3y=-6$

Slope Int $y=\frac{4}{3}x+2$

Standard $4x-3y=-6$

26. Write an equation from the table.

X	Y
-10	-12
-5	-9
0	-6
5	-3
10	0

+5 → +3

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

$y=\frac{3}{5}x+c$

$-12=\frac{3}{5}(-10)+c$

$-12=-6+c$

$-6=c$

Slope Int $y=\frac{3}{5}x-6$

27. Write an equation from the table.

X	Y
-8	4
-4	7
0	10
4	13
8	16

+4 → +3

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

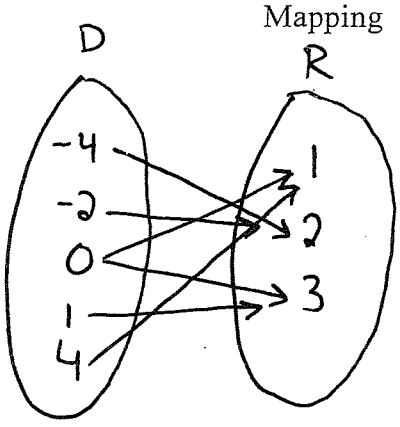
$10=\frac{3}{4}(0)+c$

$10=c$

Slope Int $y=\frac{3}{4}x+10$

28. Draw a **mapping** and create a **table of values** (T- Chart) for the relation.
H = {(–4 , 2) , (-2 , 2) , (0 , 3) , (0 , 1) , (1, 3), (4 , 1)}

Mapping



T–Chart

x	y
-4	2
-2	2
0	3
0	1
1	3
4	1

Given $f(x) = 4x - 3$ $g(x) = x^2 + 3x + 2$ $h(x) = x^2 - 4x + 1$

29. $f(2)$ $4(2)-3$ $8-3 = \boxed{5}$ 29. 5

30. $g(1)$ $1^2+3(1)+2$ $1+3+2 = \boxed{6}$ 30. 6

31. $h(-3)$ $(-3)^2-4(-3)+1$ $9+12+1 = \boxed{22}$ 31. 22

32. $g(-2)$ $(-2)^2+3(-2)+2$ $4-6+2 = \boxed{0}$ 32. 0

33. $h(0)$ $0^2-4(0)+1 = \boxed{1}$ 33. 1

34. $f(-5)$ $4(-5)-3$ $-20-3 = \boxed{-23}$ 34. -23

35. $f(p-4)$ $4(p-4)-3$ $4p-16-3$ $\boxed{4p-19}$ 35. $4p-19$

36. $f(-2)+g(5)+h(2)$ 36. 28

$f(-2) = 4(-2)-3 = -8-3 = -11$

$g(5) = 5^2+3(5)+2 = 25+15+2 = 42$

$h(2) = 2^2-4(2)+1 = 4-8+1 = -3$

$-11+42-3 = \boxed{28}$

37. $f(g(h(0)))$ 37. 21

$h(0)=1$

$g(1)=6$

$f(6) = 4(6)-3 = \boxed{21}$

38. $h(g(f(1)))$ 38. 13

$f(1) = 4(1)-3 = 1$

$g(1) = 6$

$h(6) = 6^2-4(6)+1$

$= 36-24+1$

$= \boxed{13}$