Semester 1 Review Series **Module 5 & 6** (linear graph, equations, exponents)

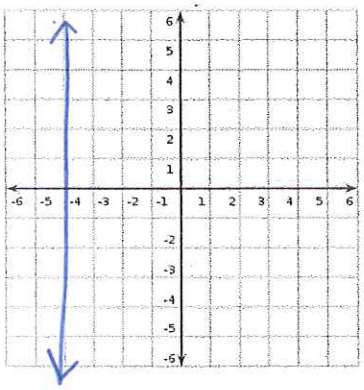
#1-2, determine the slope of each.

1. (3, -4) and (10, -1) $\frac{3}{7}$ $\frac{-4+1}{3-10}$

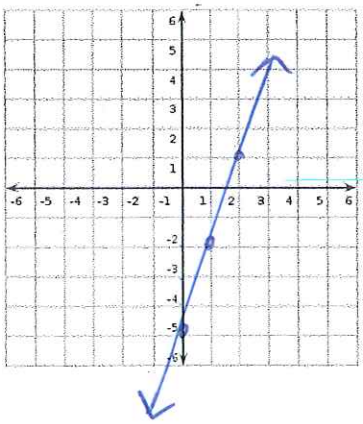
2. (4,3) and (8,3) 0 $\frac{3-3}{4-8} = \frac{0}{-4}$

#3, Graph each

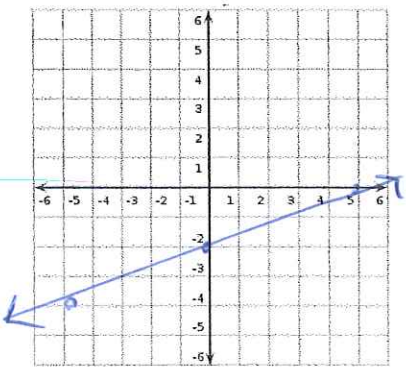
a. x = -4



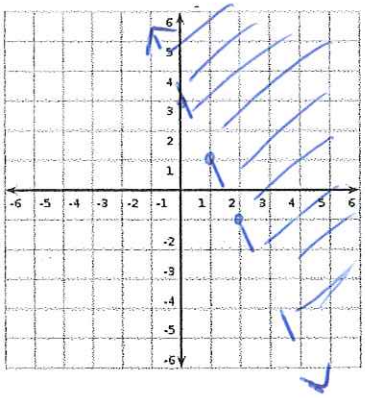
b. y = 3x - 5



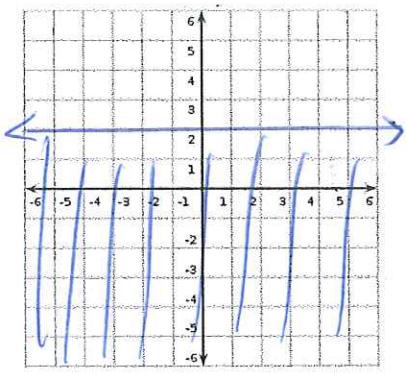
c. 2x – 5y = 10 $\frac{10-2x}{-5}$ $y = -2 + \frac{2}{5}x$



d. y > -2x + 3

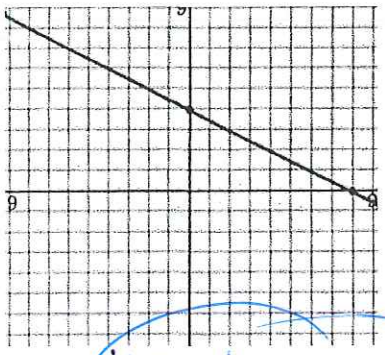


e. y ≤ 2



#4-6, Write the equation of the line for each set situation.

4.



$y = -\frac{1}{2}x + 4$

5. Slope is $\frac{1}{4}$ and goes through (-8, 15)

$y = \frac{1}{4}x + 17$

$15 = -8(\frac{1}{4}) + b$

$15 = -2 + b$

$17 = b$

6. Goes through (3,4) and (4, 6)

$\frac{4-6}{3-4} = \frac{-2}{-1} = +2$

$y = 2x - 2$

$4 = +2(3) + b$

$4 = +6 + b$

$-6 \quad -6$

$-2 = b$

#7-13, Simplify each

7. $(3a^2)^4$ — $81a^8$

8. $4bc^3 \cdot 5b^2c^2$ — $20b^3c^5$

9. $\frac{3d^2}{9d^5}$ — $\frac{1}{3d^3}$

10. $(10e)^0$ — 1

11. $5f^{-3}g^4$ — $\frac{5g^4}{f^3}$

12. $\frac{5h^{-3}j^{-7}}{h^5j^{-4}}$ — $\frac{5}{h^8j^3}$

13. $\left(\frac{4k^2m}{k^3}\right)^3$ — $\frac{64m^3}{K^3}$

14. $\frac{-2x^2y^{-7}}{3x^5y}$ — $\frac{-2}{3x^3y^8}$

15. A mountain climber is making his way up a mountain at 200 feet per hour. At 3 hours his altitude is 4,100 feet.

a. Write an equation that relates his altitude, *y*, to the time he has been climbing, *x*.

$m = +200$ $(3, 4100)$ $4100 = 3(200) + b$ $y = 200x + 3500$

b. What do you predict the climber's altitude to be in 5.5 hours?

$200(5.5) + 3500$ 4600 ft

c. How long before you predict the climber will reach 7,000 ft?

$7{,}000 = 200x + 3500$ 17.5 hrs