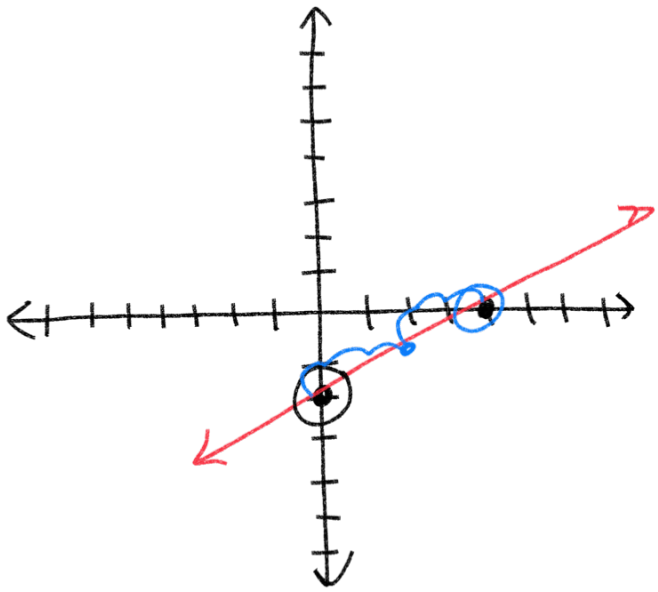
M-G Geometry Week 16 1/23

Graph.

$3x - 6y = 12$



$x = 0$

$\frac{-6y}{-6} = \frac{12}{-6}$ (0, -2)

$y = -2$

$y = 0$

$\frac{3x}{3} = \frac{12}{3}$ (4, 0)

$x = 4$

$3x - 6y = 12$

$-3x \quad -3x$

$\frac{-6y}{-6} = \frac{-3x + 12}{-6}$

$y = \frac{1}{2}x - 2$ ← y-int

↑ use slope

Find the linear equation for a line parallel to $3x - 6y = 12$ that goes through the point (x, y) (1, 2)

slopes are the same.

$3x - 6y = 12$

$-3x \quad -3x$

$\frac{-6y}{-6} = \frac{-3x + 12}{-6}$

$y = \frac{1}{2}x - 2$ slope

$y = mx + b$

given slope $= \frac{1}{2}$

$m =$

$y = mx + b$

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

$y = mx + b$

$2 = \left(\frac{1}{2}\right)(1) + b$

$2 = \frac{1}{2} + b$

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

$b = 3/2$

Determine the linear equation for a line perpendicular to $y = \frac{-3}{4}x + 8$ that goes through the point $(6, -9)$ (x, y)

perpendicular lines → opposite inverse

$y = mx + b$

↑ slope ↑ y-intercept

$y = \frac{-3}{4}x + 8$ ← slope

given slope $-\frac{3}{4}$ → opposite $\frac{3}{4}$ → inverse $\frac{4}{3}$ new slope

change sign — flip

$y = mx + b$

$-9 = \left(\frac{4}{3}\right)(6) + b$

$-9 = 8 + b$

$-8 \quad -8$

$-17 = b$

$y = mx + b$

$$y = \frac{4}{3}x - 17$$

Geometry Chapter 3 Pre-Test

1.) (2 pts each, 10 pts total) Use the following illustration to define the relationship between each of the angles listed. Please include both the type of angles and whether they are congruent, supplemental, or ~~complementary~~.

$=180°$ $=90°$

a) ∠1 & ∠8

corresponding, congruent

b) ∠5 & ∠7

vertical, congruent

c) ∠4 & ∠5

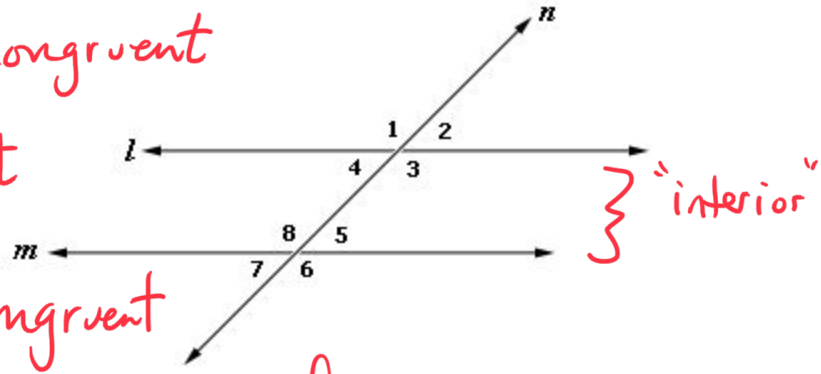
alternate interior, congruent

d) ∠4 & ∠8

same-side interior, supplemental

e) ∠5 & ∠8

linear pair, supplemental



linear pair
vertical angles
Corresponding
alt. interior
same-side interior

2.) (10 pts) Find the value of x and y.

1.) look for same variable

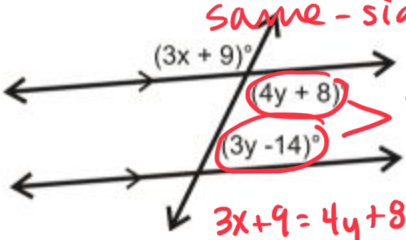
$4y+8+3y-14=180$

$7y-6=180$

$+6 \quad +6$

$\frac{7y}{7}=\frac{186}{7}$ $y=\frac{186}{7}$

$y=26.57\ldots$



$3x+9=4y+8$

$3x+9=4(26.57)+8$

$3x+9=106.28+8$

3.) (2.5 pts each, 10 pts total) Find the angle measure of each of the indicated angles.

$3x+9=114.28$

$-9 \quad -9$

$\frac{3x}{3}=\frac{105.28}{3}$

$x \approx 35.1$

a) ∠1

b) ∠2

c) ∠3

d) ∠4

$\angle 3+32=180$

$-32 \quad -32$

$\angle 3=148°$