

TH-6 Geometry Week 17

congruent - equal

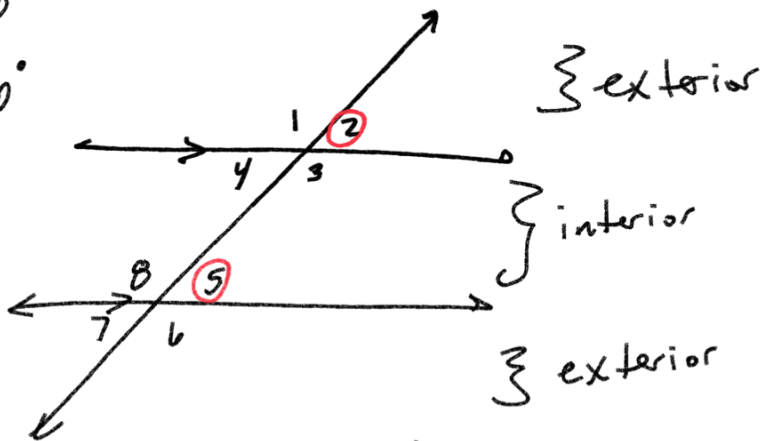
supplemental - sum equals 180°

complementary - sum equals 90°

$\angle 2 \cong \angle 5$ - congruent corresponding angles

$\angle 1 \cong \angle 3$ - congruent vertical angles

$\angle 3 \cong \angle 5$ - supplemental same-side interior



$\angle 3 \cong \angle 8$ congruent alternate interior angles

$\angle 7 \cong \angle 6$ supplemental linear pairs

$$5y + 10 + 7y - 30 = 180$$

$$12y - 20 = 180$$

$$\quad +20 \quad +20$$

$$\frac{12y}{12} = \frac{200}{12}$$

$$y = 16.\bar{6}$$

$$= \frac{50}{3}$$

$$\frac{1}{8}(8x) = \left(\frac{310}{3}\right)\frac{1}{8}$$

$$x = \frac{310}{24} \div 2 = \frac{155}{12}$$

[12.9]

$$8x - 10 = 5y + 10$$

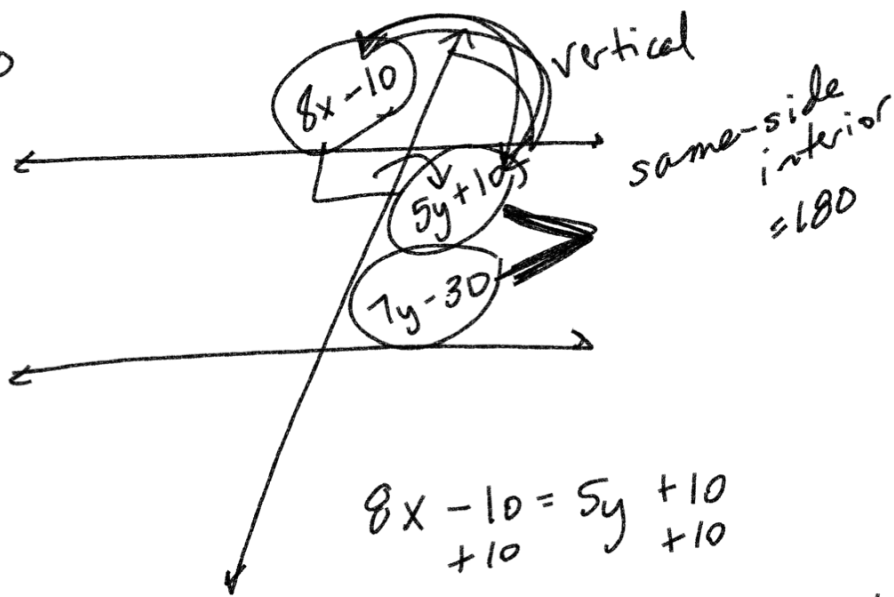
$$\quad +10 \quad +10$$

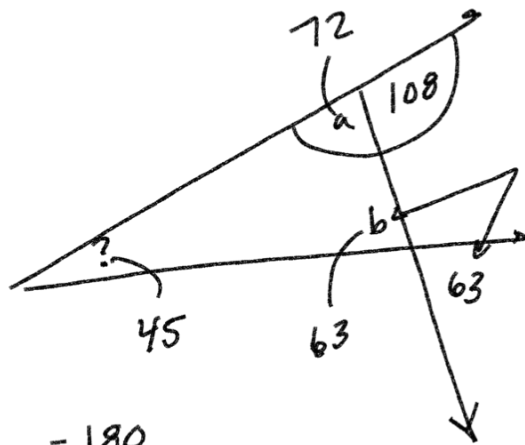
$$8x = 5y + 20$$

$$8x = 5\left(\frac{50}{3}\right) + 20$$

$$8x = \frac{250}{3} + \frac{60}{3}$$

$$20 = \frac{60}{3}$$





vertical angles
- congruent

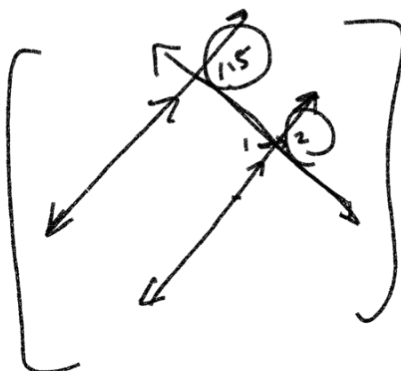
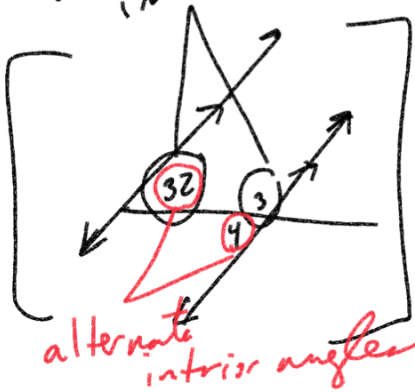
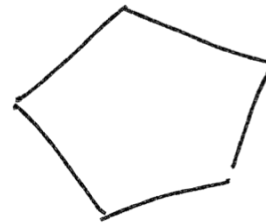
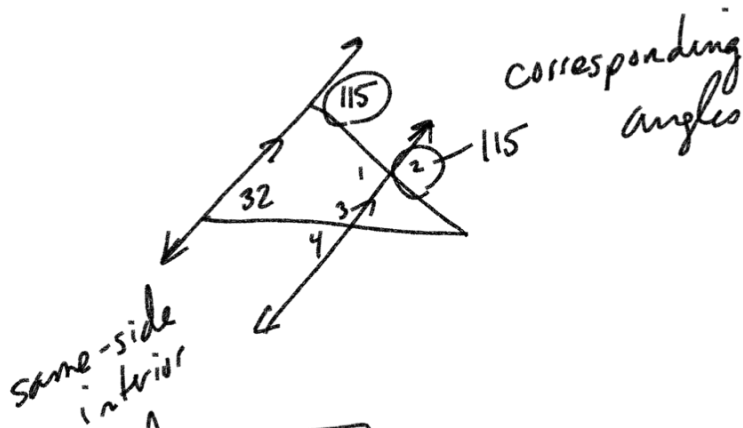
$$\begin{array}{r} z + a + b = 180 \\ \downarrow \quad \downarrow \quad \downarrow \\ ? + 72 + 63 = 180 \end{array}$$

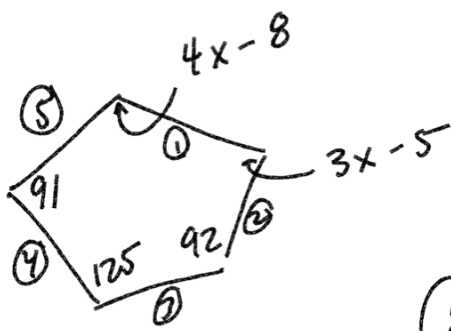
$$\begin{array}{r} ? + 135 = 180 \\ -135 \quad -135 \end{array}$$

$? = 45$

$$\begin{array}{r} a + 108 = 180 \\ -108 \quad -108 \end{array}$$

$a = 72$





$$\boxed{(n-2)(180)}$$

$n = \# \text{ of sides}$

$$(5-2)(180)$$

$$3(180) = 540$$

$$540 = \underbrace{91 + 125 + 92}_{295} + \underbrace{3x-5}_{7x} + \underbrace{4x-8}_{7x}$$

$$540 = 295 + 7x$$

$$\begin{array}{r} 540 \\ -295 \\ \hline 245 \end{array} = 7x$$

$$\frac{245}{7} = \frac{7x}{7}$$

$$\boxed{x = 35}$$

all sides are equal
 12-sided regular polygon
 What is the angle measure of each angle?

$$(n-2)(180)$$

$$(12-2)(180) = (10)(180) = \frac{1800}{12} = \boxed{150^\circ}$$

Find slope.

$$\begin{array}{cc} x_1 & y_1 \\ (2, & 5) \end{array} \begin{array}{cc} x_2 & y_2 \\ (5, & -1) \end{array}$$

$$\text{slope} = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$\frac{-1 - 5}{5 - 2} = \frac{-6}{3} = \boxed{-2}$$

slope $m = -2$

point $(3, -8)$

slope-intercept

$$y = mx + b$$

$$-8 = (-2)(3) + b$$

$$-8 = -6 + b$$

$$+b \quad +b$$

$$-2 = b$$

$$y = mx + b$$

$$y = -2x - 2$$

point-slope

$$y - y_1 = m(x - x_1)$$

$$y - (-8) = -2(x - 3)$$

$$y + 8 = -2x + 6$$

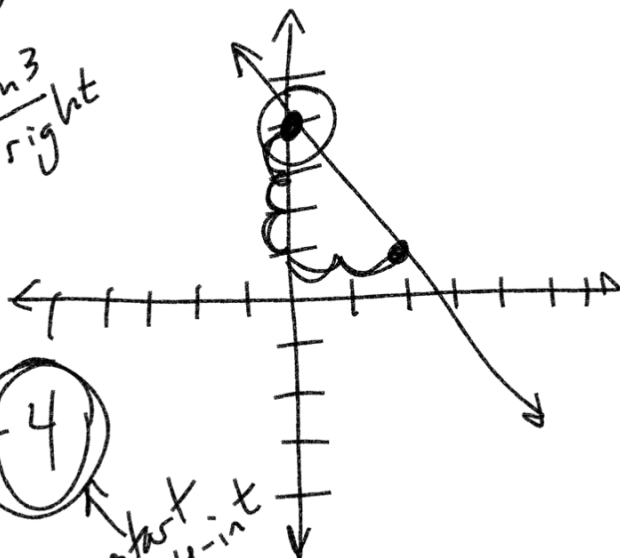
$$-8 \quad -8$$

$$y = -2x - 2$$

slope $= -\frac{3}{2} = \frac{\text{down } 3}{2 \text{ right}}$

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

start y-int



$$(x_1, y_1) \quad (x_2, y_2)$$
$$(-2, 5) \quad (1, -4)$$

Find slope

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{-4 - 5}{1 - (-2)} = \frac{-9}{1+2} = \frac{-9}{3} = -3$$

$$m = -3 \quad (1, -4)$$

$$y = mx + b$$

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$$-4 = (-3)(1) + b$$
$$-4 = -3 + b$$

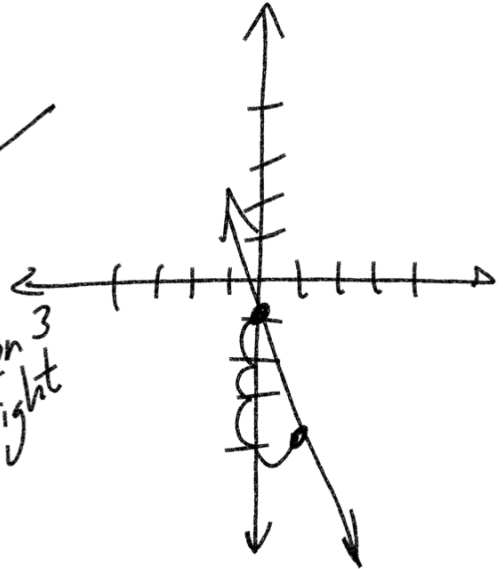
+3 +3

$$-1 = b$$

$$y = mx + b$$
$$y = -3x - 1$$

slope = $\frac{-3}{1}$ down 3
1 right

rise
run



$$2x - 4y = 12$$

-2x -2x

$$\frac{-4y}{-4} = \frac{-2x + 12}{-4}$$

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

parallel lines have same slope.

perpendicular lines have opposite inverse slope

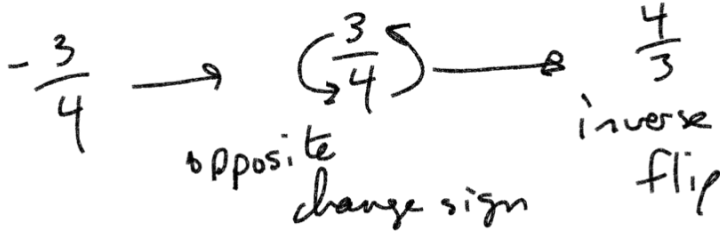
$$y = \left(-\frac{3}{4}\right)x + 3$$

parallel

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

perpendicular

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



HW
Optional HW 17 ch 3 Review
No Quiz 17
Pre-Test
Actual Test (Feb 4th)
HW/Quiz 16 Jan 28th

