

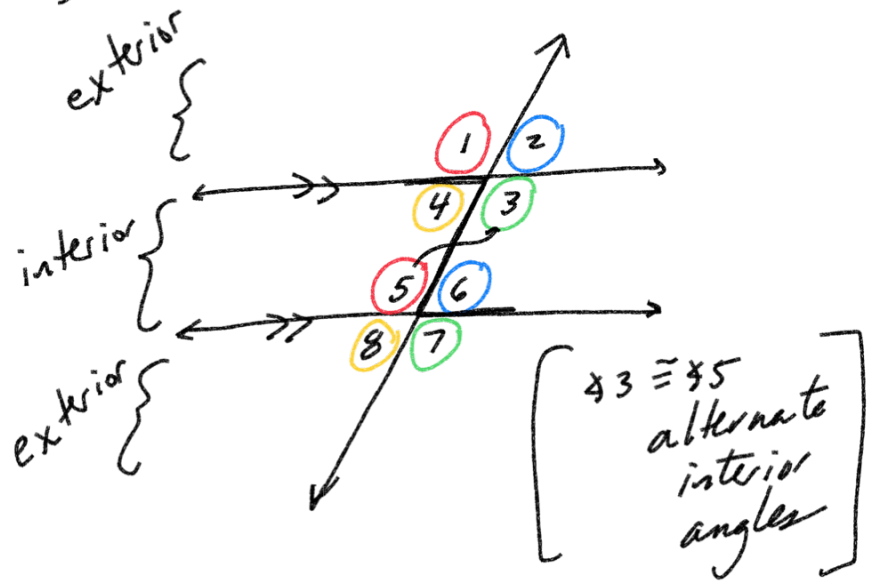
TH-G Geometry Week 13

$\angle 1 \cong \angle 5$
Corresponding

$\angle 4 \cong \angle 6$
alternate interior angles

$\angle 5 + \angle 6 = 180^\circ$
supplemental \rightarrow linear pairs

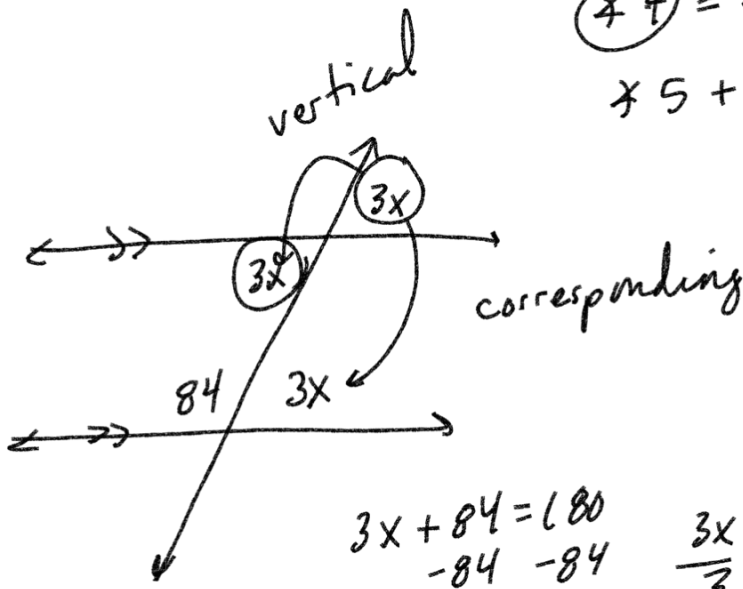
$\angle 4 + \angle 5 = 180^\circ$
same-side interior angles



$\angle 2 \cong \angle 6$ corresponding
 $\angle 2 \cong \angle 4$ vertical angles

$\angle 4 \cong \angle 6$ substitution

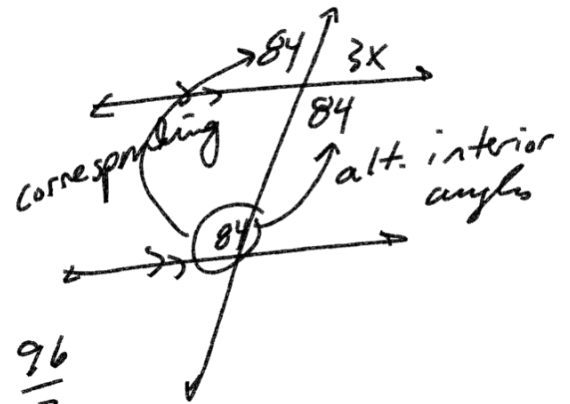
$\angle 5 + \angle 6 = 180^\circ$ linear pairs
 $\angle 4 \cong \angle 6$ alt. interior angles
 $\angle 5 + \angle 4 = 180^\circ$ substitution

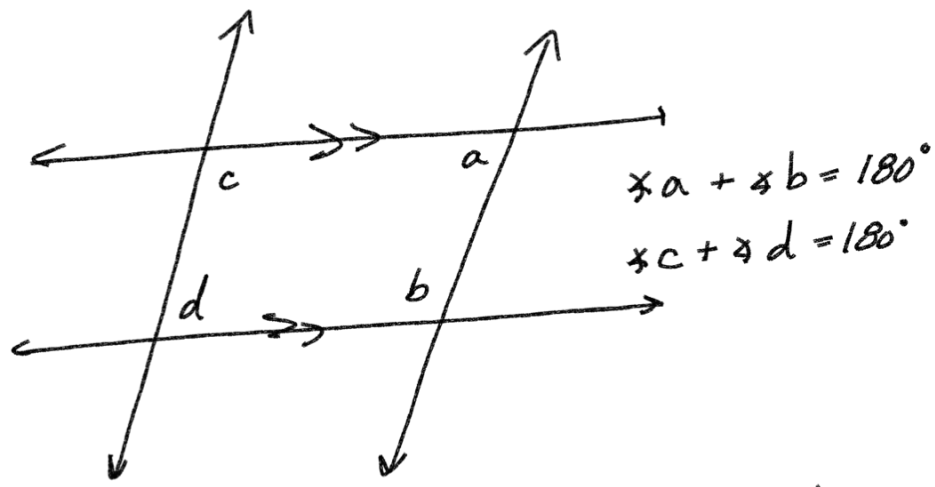


$3x + 84 = 180$
 $-84 \quad -84$

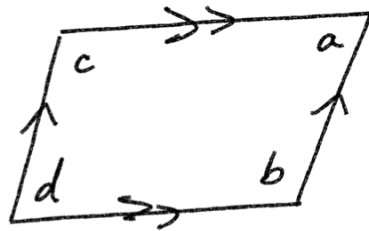
$\frac{3x}{3} = \frac{96}{3}$

$x = 32$





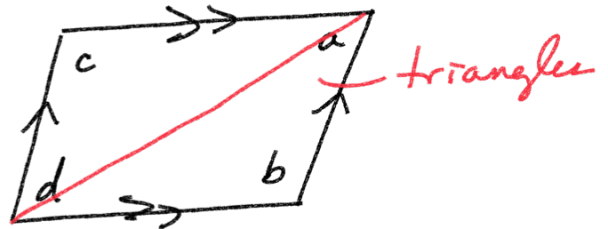
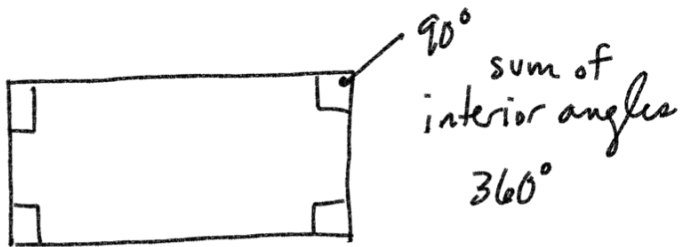
parallelogram quadrilateral (4 sides)



$$\angle a + \angle b = 180^\circ$$

$$\angle c + \angle d = 180^\circ$$

$$\underbrace{\angle a + \angle b}_{180^\circ} + \underbrace{\angle c + \angle d}_{180^\circ} = 360^\circ$$



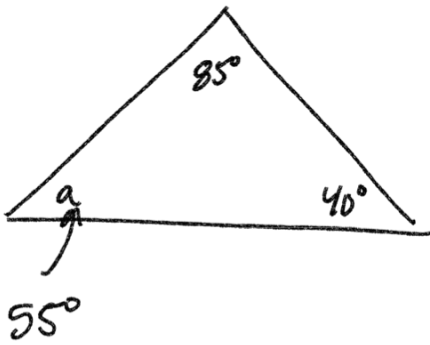
sum of the interior angles in a triangle

$$\frac{360^\circ}{2} = \boxed{180^\circ}$$

Triangle Angle Sum Theorem

Sum of the interior Angles in a Triangle Equals 180°

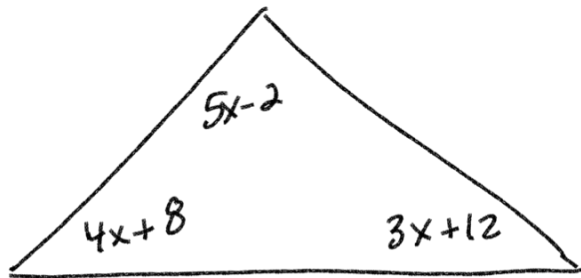
(image not drawn to scale)



$$85 + 40 + a = 180$$

$$125 + a = 180$$
$$\begin{array}{r} -125 \\ -125 \end{array}$$

$$\boxed{a = 55}$$

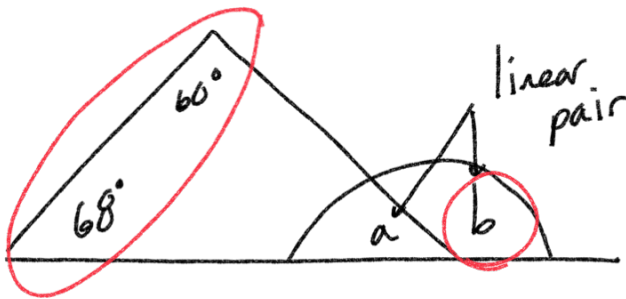


$$4x + 8 + 5x - 2 + 3x + 12 = 180^\circ$$

$$12x + 18 = 180$$
$$\begin{array}{r} -18 \\ -18 \end{array}$$

$$\frac{12x}{12} = \frac{162}{12}$$

$$\boxed{x = 13.5}$$



$$b = 60 + 68$$

$$b = 128^\circ$$

Exterior Angle

$$60 + 68 + a = 180$$

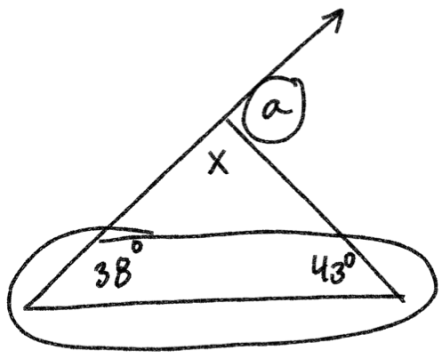
$$128 + a = 180$$
$$\begin{array}{r} -128 \\ -128 \end{array}$$

$$a = 52$$

$$\boxed{60 + 68} + a = 180^\circ$$
$$\boxed{b} + a = 180^\circ$$

$$b + 52 = 180^\circ$$
$$\begin{array}{r} -52 \\ -52 \end{array}$$

$$\boxed{b = 128^\circ}$$



$$x = 99^\circ$$

$$a = 81^\circ$$

$$a = 38^\circ + 43^\circ = 81^\circ$$

$$38 + 43 + x = 180$$

$$\begin{array}{r} 81 + x = 180 \\ -81 \quad -81 \end{array}$$

$$x = 99$$

$$\begin{array}{r} 99 + a = 180 \\ -99 \quad -99 \end{array}$$

$$a = 81$$

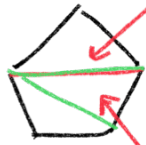
3-4 Polygon Angle Sum Theorem

Shape	Sides	sum of interior angles	difference
Triangle	3	180°	180(1)
Quadrilateral	4	360°	180(2)
Pentagon	5	540°	180(3)
Hexagon	6	720°	180(4)
	$n - 2$		

of triangles you have → $n - 2$

$(n - 2) 180$

Pentagon



triangle $\rightarrow 180^\circ$

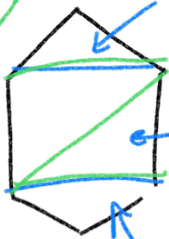
3 triangles

$$3(180) = 540$$

quadrilateral $\rightarrow 360^\circ$

Total interior angle measure = $180^\circ + 360^\circ = 540^\circ$

4 triangles



triangle $\rightarrow 180^\circ$

quadrilateral $\rightarrow 360^\circ$

triangle $\rightarrow 180^\circ$

4(180)

720

$$180^\circ + 360^\circ + 180^\circ = 720^\circ$$

sum of interior angle measures

Octagon

sides $\rightarrow 8$
(n)

$$(8-2)180$$

$$6(180) = 1080^\circ$$

42-gon

sides $\rightarrow 42$

$$(42-2)180$$

$$(40)(180) = 7200^\circ$$

Regular \rightarrow equal sided

Regular Polygon is a shape with all equal sides

12-sided regular polygon (Individual interior angle measure)

$$\frac{\text{sum of total interior angle measure}}{\text{number of angles/sides}}$$

Sum of interior angle measure
 $n = 12$

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

$$(12-2)(180)$$

$$(10)(180)$$

$$\frac{1800}{12} = \boxed{150^\circ}$$

HW

3-3 even

3-4 evens

* Supplemental WS
Online HW 13
Quiz 13
due

(Sat-Sun)
(Sat-Sun)

December 25th - 27th

