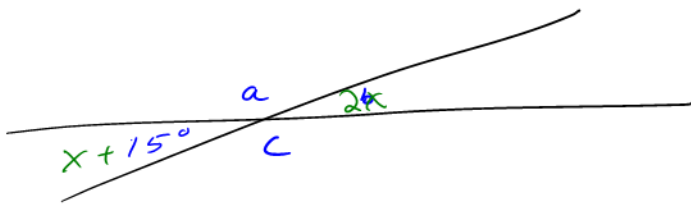


Find the values of a, b, c . State your reasons.



$$a = 165^\circ, \text{ SAT}$$

$$b = 15^\circ, \text{ OAT}$$

$$c = 165, \text{ SAT or OAT}$$

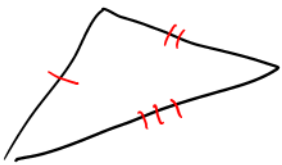
Warm-up ↑

$$x + 15 = 2x$$

$$15 = x$$

Triangles -- June 13, 2016

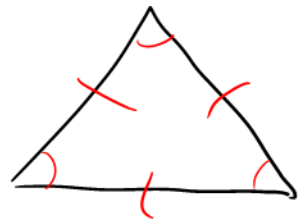
Classify by side:



- Scalene
- no equal sides
- no equal angles



- Isosceles
- 2 equal sides
- base angles equal



- Equilateral
- 3 sides equal
- angles are 60°

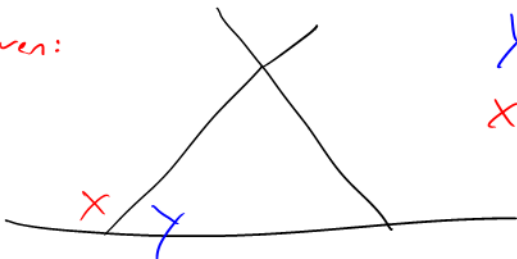
Classify by angle

- Acute triangle
- all angles are acute

- Obtuse Triangle
- one angle is obtuse

- Right Triangle
- one right angle

Given:



y is the interior angle
 x is the exterior angle

Angle Sum Triangle Theorem (ASTT)

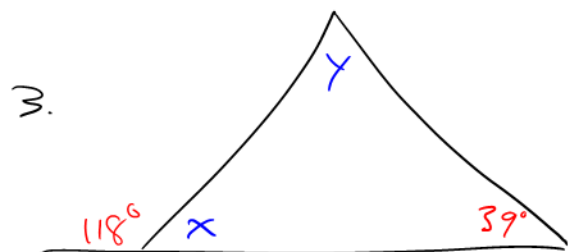
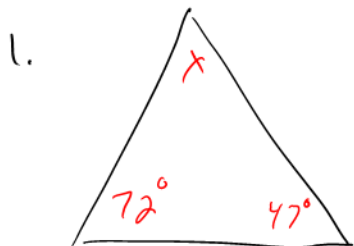
→ the three angles in a triangle add up to 180°

pg 522

$$x + 72 + 47 = 180$$

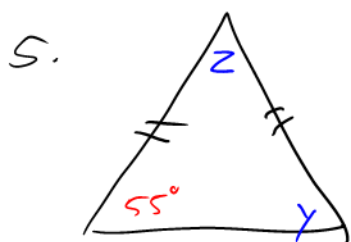
$$x = 180 - 72 - 47$$

$$x = 61^\circ$$



$$x = 180 - 118 = 62^\circ, \text{ SAT}$$

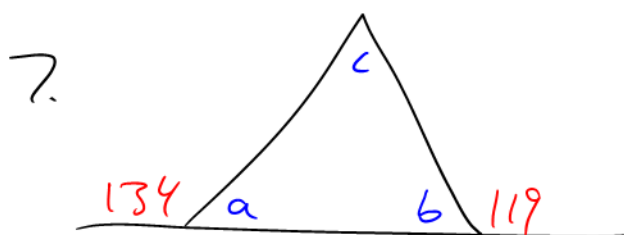
$$y = 180 - 39 - 62 = 79^\circ, \text{ ASTT}$$



$$y = 55^\circ, \text{ ITT} \rightarrow \text{Isosceles Triangle Theorem}$$

$$z = 180 - 55 - 55$$

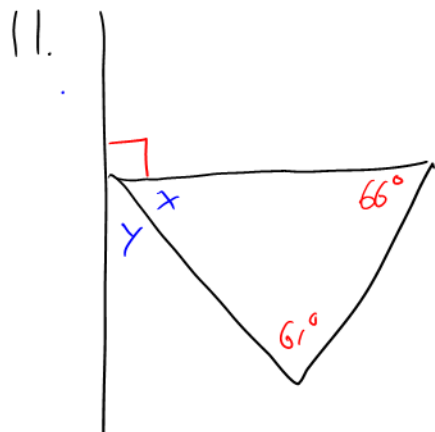
$$= 70^\circ, \text{ ASTT}$$



$$a = 46^\circ, \text{ SAT}$$

$$b = 61^\circ, \text{ SAT}$$

$$c = 180 - 46 - 61 = 73^\circ, \text{ ASTT}$$

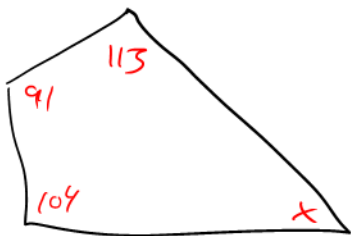


$$x = 180 - 66 - 61$$

$$= 53^\circ, \text{ ASTT}$$

$$y = 37^\circ, \text{ CAT}$$

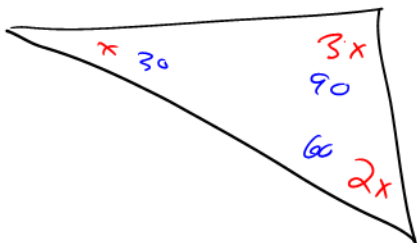
13.



$$x = 360 - 113 - 91 - 104 = 52^\circ$$

19.

a)

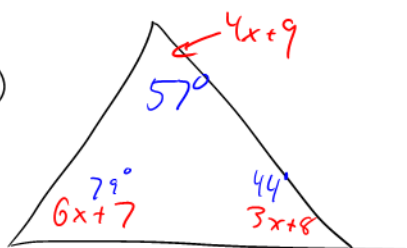


$$x + 3x + 2x = 180$$

$$6x = 180$$

$$x = 30^\circ$$

c)



$$4x+9 + 3x+8 + 6x+7 = 180$$

$$13x + 24 = 180$$

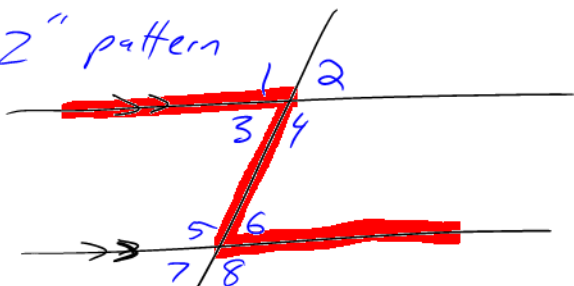
$$\frac{13x}{13} = \frac{156}{13}$$

$$x = 12^\circ$$

Parallel Line Theorems.

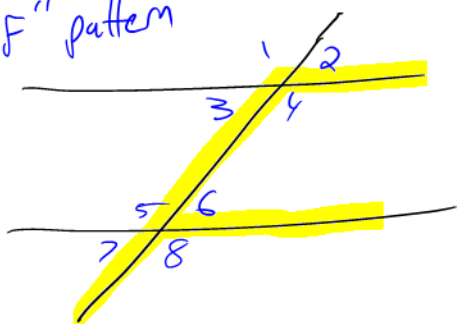
pg 535.

① "Z" pattern

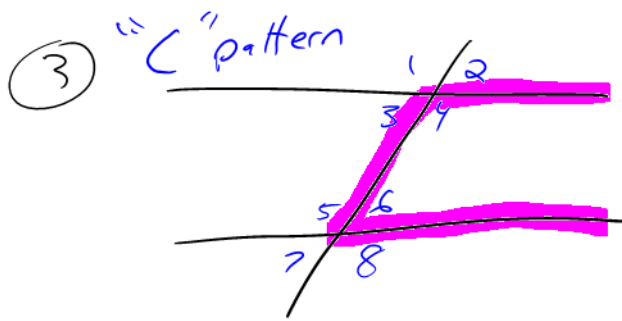


angle 3 = angle 6
and therefore 4 = 5

② "F" pattern



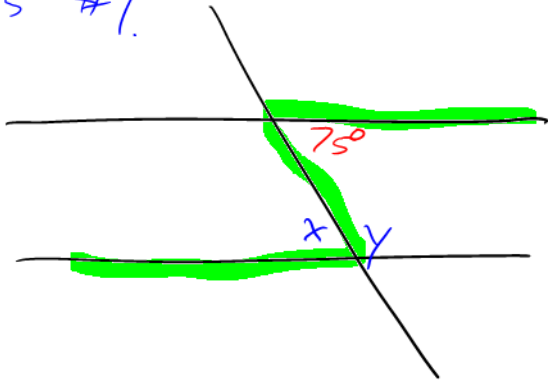
angle 4 = angle 8



$$\text{angle } 4 + \text{angle } 6 = 180^\circ$$

These angles are called
co-interior angles

pg 535 #1.



$$y = 180 - 75 = 105^\circ, \text{ "C" pattern}$$

$$x = 75^\circ, \text{ "Z" pattern or SAT}$$

Homework: pg 522 # 2, 4, 6, 8, 10, 14, 19b, 19d

pg 535 # 2, 4