

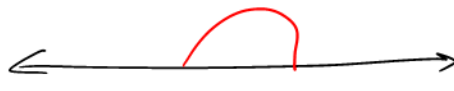
Unit 10) Plane Geometry -- Angles | June 10, 2016

Today, we will look at 5 angles and

3 theorems

↳ think of these as mathematical truths.

Angles:

- ① Acute angle: Less than 90° 
- ② Right angle: 90° 
- ③ Obtuse angle: Between 90° and 180° 
- ④ Straight angle: 180° 
- ⑤ Reflex angle: Between 180° and 360° 

Theorems:

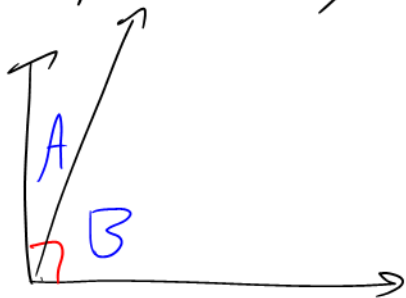
- ① Supplementary Angle Theorem (SAT)



$$A + B = 180^\circ$$

→ supplementary angles add up to 180°

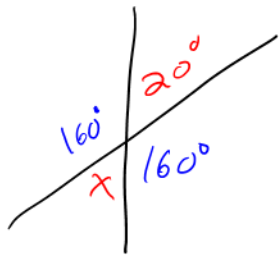
- ② Complementary Angle Theorem (CAT)



$$A + B = 90^\circ$$

→ complementary angles add up to 90°

③ Opposite Angle Theorem (OAT)

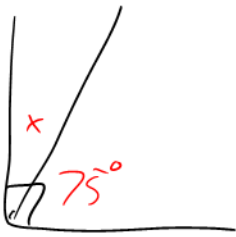


$x = 20^\circ$ by doing SAT twice.

→ opposite angles are equal.

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5 a)



$x = 15^\circ$, CAT

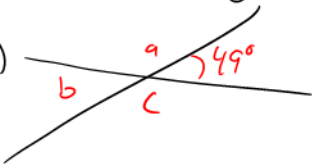
b)



$y = 45^\circ$, SAT

Intersecting Lines

1 a)



$a = 131^\circ$, OAT, SAT

$b = 49^\circ$, OAT

$c = 131^\circ$, SAT

b)

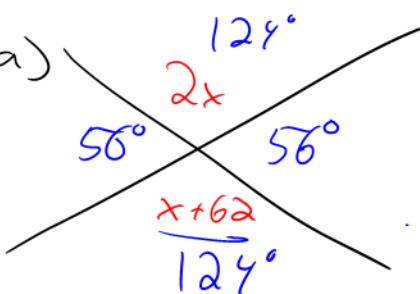


$x = 14^\circ$, SAT

$y = 166^\circ$, OAT

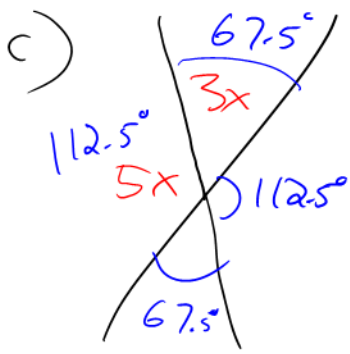
$z = 14^\circ$, OAT or SAT

2 a)



$2\bar{x} = \bar{x} + 62$, OAT

$x = 62^\circ$



$$5x + 3x = 180, \text{ SAT}$$

$$\frac{8x}{8} = \frac{180}{8}$$

$$x = 22.5^\circ$$

Triangles:

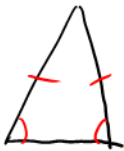
classified by sides:

①



Scalene $\rightarrow$ no sides equal
 $\rightarrow$ no angles equal

②



Isosceles $\rightarrow$ two sides equal
 $\rightarrow$ base angles equal

③



Equilateral $\rightarrow$ three sides equal
 $\rightarrow$ angles are 60°

classified by angles:

Acute Triangle: all 3 angles are acute

Obtuse Triangle: one angle is obtuse

Right Triangle: has a right angle.

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