

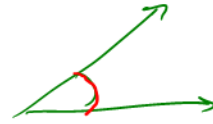
Chapter 10 | Plane Geometry | June 9, 2016

Today we look at 5 types of angles and
3 angle theorems.

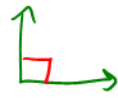
↳ for our purposes, theorems are
mathematical truths

Angles:

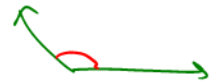
① Acute angle: less than 90°



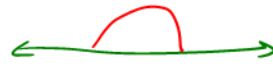
② Right angle: 90°



③ Obtuse angle: Between 90° and 180°



④ Straight angle: 180°



⑤ Reflex angle: Between 180° and 360°



3 Theorems:

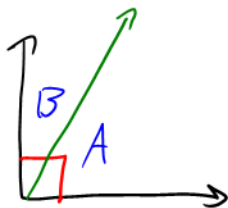
① Supplementary Angle Theorem (SAT)



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

→ supplementary angles add up to 180°

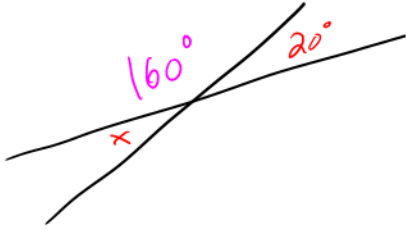
② Complimentary Angle Theorem (CAT)



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

→ complimentary angles add up to 90°

③ Opposite Angle Theorem (OAT)



- 160° because of SAT
- $x = 20^\circ$ because of SAT

→ Opposite angles are equal.

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2. a) $90^\circ \rightarrow$ right b) $180^\circ \rightarrow$ straight

c) $45^\circ \rightarrow$ acute d) $100^\circ \rightarrow$ obtuse

3. a) 30° , the comp is 60°

b) 42° , the comp is 48°

c) 75° , the comp is 15°

d) 9° , the comp is 81°

The two angles
add to 90°

4. e) 125° , the supp is 55°

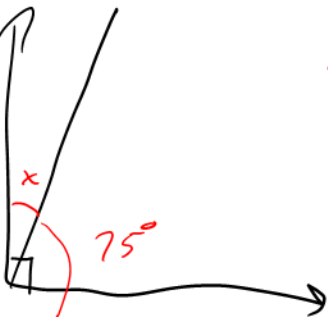
f) 8° , the supp is 172°

g) 110° , the supp is 70°

h) 179° , the supp is 1°

The two angles
add to 180°

5. a)



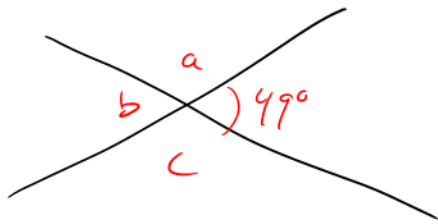
$x = 15^\circ$, CAT b)



$y = 45^\circ$, SAT

Intersecting Lines

1. a)



$$a = 131^\circ, \text{ SAT}$$

$$b = 49^\circ, \text{ OAT}$$

$$c = 131^\circ, \text{ SAT or OAT}$$

b)

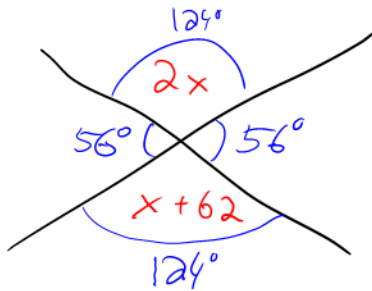


$$x = 24^\circ, \text{ SAT}$$

$$y = 166^\circ, \text{ OAT}$$

$$z = 24^\circ, \text{ SAT or OAT}$$

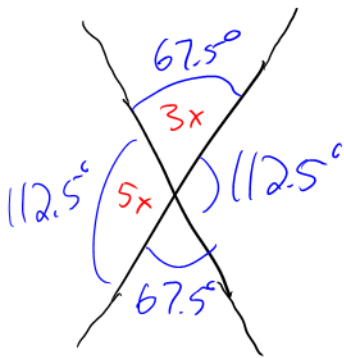
2. a)



$$2x = x + 62$$

$$x = 62$$

c)



$$5x + 3x = 180$$

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

$$x = 22.5^\circ$$

Homework: pg 5/2