Unit 11: Angles and Triangles

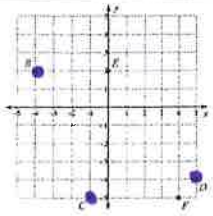
Lesson 1: Angles

Notes 11.1

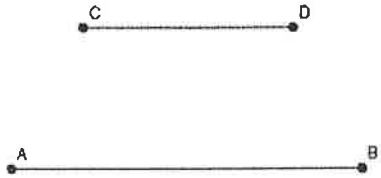
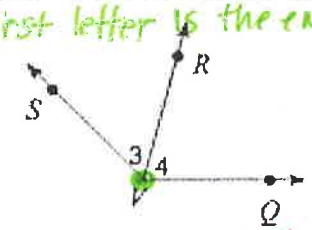
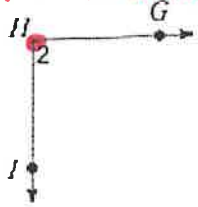
Name: Key

Hour: _____

Points, Lines and Planes

Word	Notation	Diagram
Point An exact location -	Always labeled w/ a capital letter	A L
Line One-dimensional, straight figure - extends infinitely in both directions	$\overleftrightarrow{AB}$	
Plane Two dimensional, flat surface - extends infinitely in all directions	BCD Any 3 letters not on the same line.	

Segments, Rays and Angles

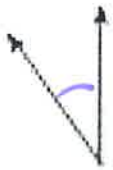
Word	Notation	Diagram
Line segment, or segment length of a line segment part, piece or portion of a line. Has two endpoints	$\overline{CD}$ or $\overline{CD}$	
Ray Starts @ one endpoint and extends infinitely in the opposite direction	$\overrightarrow{VS}$ $\overrightarrow{VR}$ $\overrightarrow{VQ}$	* first letter is the endpoint. 
Angle ∠ Measure of an Angle m∠ The space between two intersecting lines.	∠JHG ∠H ∠2	* vertex is the middle letter 

Angle Measures

Right Angle

90°

Acute Angle



less than 90°

Obtuse Angle

greater than 90°

Straight Angle

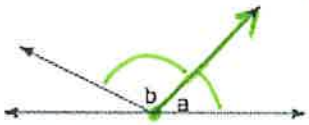
180°

Classify the angle by measure

1. 65° acute
2. 145° obtuse
3. 90° right
4. 180° Straight

More with Angles

Adjacent Angles



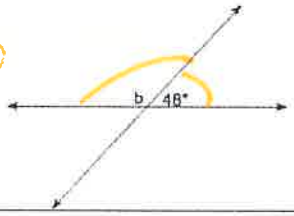
∠a and ∠b are adjacent

Notes: two angles that share a side and vertex

Supplementary Angles

∠b + 48° = 180

b = 132°

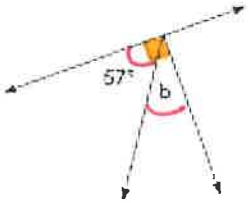


Notes: two angles whose sum is 180°. They combine to make a straight line.

Complementary Angles

∠b + 57 = 90

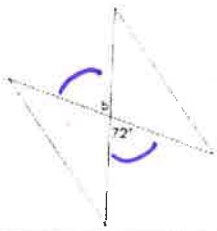
b = 33°



Notes: two angles whose sum is 90°. They combine to make a right angle

Vertical Angles

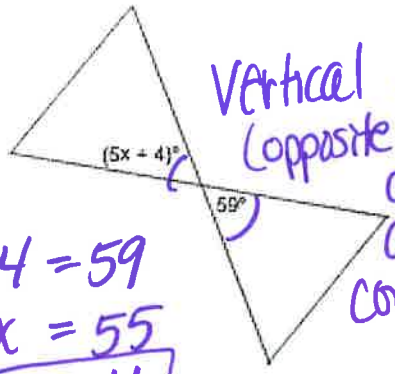
M∠b = 72°



Notes: "opposite" angles are congruent.
Made by two intersecting lines.

Name the relationship of the angles given. Find the value of x, if possible

1



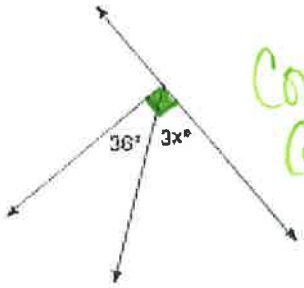
Vertical (opposite) angles are congruent

$5x+4=59$

$5x=55$

$x=11$

2



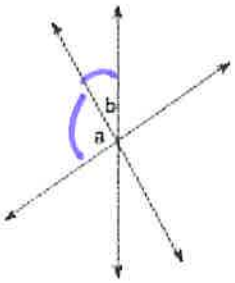
Complementary (add up to 90°)

$3x+36=90$

$3x=54$

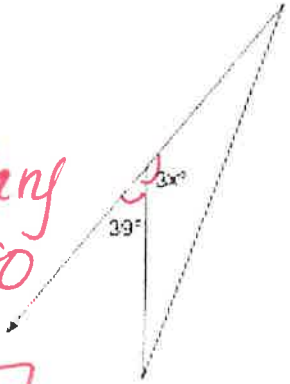
$x=18°$

3



$\angle a$ & $\angle b$ adjacent

4



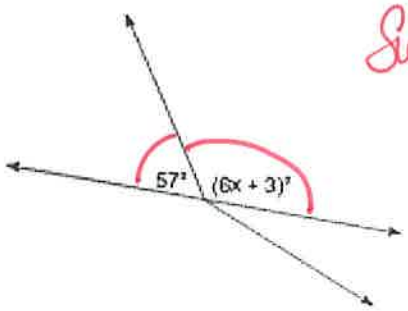
Supplementary

$39+3x=180$

$3x=141$

$x=47°$

5



Supplementary (add up to 180°)

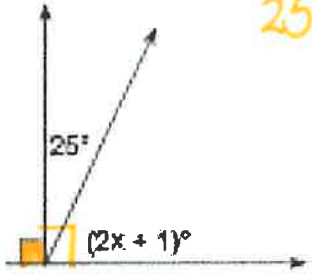
$57+6x+3=180$

$6x+60=180$

$6x=120$

$x=20°$

6



Complementary

$25+2x+1=90$

$2x+26=90$

$2x=64$

$x=32°$

State whether the angle are complementary, supplementary, or neither.

7. 25°, 65° — Complementary $25+65=90$

8. 70°, 65° — Neither $70+65=135$

9. 31°, 59° — Complementary $31+59=90$

10. 58°, 122° — Supplementary $58+122=180°$