Slide 1 — Sep 15-9:13 AM

Content Objective: *I will be able to name (using correction notation) and classify angles by their measures.*

TERM	DESCRIPTION	EXAMPLE	HOW TO NAME IT
RAY	An object consisting of one *endpoint* and continues *infinitely* in one direction.		
ANGLE	An object consisting of two *rays* (called sides) with a common *endpoint* (called a vertex).		

EXAMPLE 1: *Name each of the following:*

Sides: $\overrightarrow{BA}$ $\overrightarrow{BC}$

Vertex: B

Angle: $\angle ABC$, $\angle CBA$, $\angle B$

CONSTRUCTION: Copy ∠**ABC** and bisect it.

Slide 2 — Sep 15-9:15 AM

Angle: _____

CONSTRUCTION: Copy ∠**ABC** and bisect it.

EXAMPLE 2:

a. How does the diagram in Example 1 differ from the diagram shown below?

Ex 2 are adjacent angles

b. Name a point in the interior of ∠**QPS**. R

c. Name a point in the exterior of ∠**QPR**. _____

Geometry Unit 1 - Essentials of Geometry   Page 73

Slide 3 — Sep 15-9:18 AM

Notes: **ANGLES**

In item d. below, you would read "m∠QPR" as "the measure of angle QPR".

d. If the **m∠QPR** = 68° and **m∠RPS** = 25°, what is the **m∠QPS**? __93__ °

ANGLE ADDITION POSTULATE

If R is in the interior of ∠PQS, then m∠PQR + m∠RQS = m∠PQS.

If m∠PQR + m∠RQS = m∠PQS, then R is in the interior of ∠PQS.

EXAMPLE 3: If m∠PQS = 77° and m∠PQR = 32°, then find m∠RQS.

Slide 4 — Sep 15-9:19 AM

EXAMPLE 3: If m∠PQS = 77° and m∠PQR = 32°, then find m∠RQS.

$m\angle RQS = 77 - 32$
$m\angle RQS = 45°$

m∠RQS = __45__ °

EXAMPLE 4:

If **m∠AOC** = 70°, **m∠AOB** = (x + 10)°, and **m∠BOC** = $x°$, find the following values:

x = _____

m∠BOC = _____ °

Slide 5 — Sep 15-9:22 AM

EXAMPLE 4:

If m∠AOC = 70°, m∠AOB = (x + 10)°, and m∠BOC = $x°$, find the following values:

$x + 10 + x = 70$
$2x + 10 = 70$
$\quad -10 \quad -10$
$2x = 60$
$\frac{2x}{2} = \frac{60}{2}$
$\boxed{x = 30}$

x = __30__

m∠BOC = __30__ °

m∠AOB = __40__ °

Geometry Unit 1 - Essentials of Geometry   Page 74

Notes: **ANGLES**

Slide 6 — Sep 15-9:23 AM

TERM	DESCRIPTION	EXAMPLE
acute	An angle that has a degree measure *less than 90°*.	
right	An angle has a degree measure *equal to 90°*.	
obtuse	An angle has a degree measure *greater than 90° and less than 180°*.	
straight	An angle has a degree measure *equal to 180°*.	

EXAMPLE 5: *For each of the following angles:*
  a. *Name it in two different ways*
  b. *Tell whether its measure is < 90°, > 90°, = 90°, or = 180°*
  c. *Classify it.*
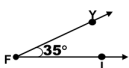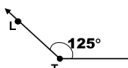
Sep 15-9:25 AM

c. Classify it.

35°
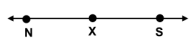
a. ANGLE: ∠YFI OR ∠IFY or ∠F
b. MEASURE: 35°
c. CLASSIFICATION: acute

125°

a. ANGLE: ∠LTC OR ∠CTL or ∠T
b. MEASURE: 125°
c. CLASSIFICATION: obtuse

a. ANGLE: ∠RTS OR ∠STR or ∠T
b. MEASURE: 90°
c. CLASSIFICATION: right

a. ANGLE: ∠NXS OR ∠SXN or ∠N
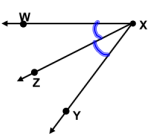b. MEASURE: 180°
c. CLASSIFICATION: straight

Sep 15-9:26 AM

TERM	DESCRIPTION	EXAMPLE
ANGLE BISECTOR	A ray, line, or line segment that divides an angle into two congruent angles.	

EXAMPLE 6:

If $\overrightarrow{XZ}$ is an angle bisector of ∠**WXY**, name the two congruent angles that it forms. Use congruent marks to show which angles in the diagram are congruent.

∠WXZ ≅ ∠ZXY

EXAMPLE 7:

$\overrightarrow{FG}$ bisects ∠**EFH**. Given the following expressions, set up and solve equations to determine
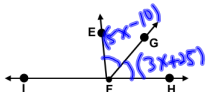
Sep 15-9:27 AM

EXAMPLE 7:

$\overrightarrow{FG}$ bisects ∠**EFH**. Given the following expressions, set up and solve equations to determine the value of x.

(5x − 10)
(3x + 25)

a. m∠EFG = $(5x - 10)°$
     m∠GFH = $(3x + 25)°$

b. m∠GFH = $(3x + 20)°$
     m∠EFH = $(4x + 80)°$

$$5x - 10 = 3x + 25$$
$$-3x \qquad -3x$$
$$2x - 10 = 25$$
$$+10 \qquad +10$$
$$\frac{2x}{2} = \frac{35}{2}$$

x = $x = 17.5$

x = _____

Sep 15-9:29 AM

EXAMPLE 7:

$\overrightarrow{FG}$ bisects ∠**EFH**. Given the following expressions, set up and solve equations to determine the value of x.

(4x+80)
(3x+20)
3x+40

a. m∠EFG = $(5x - 10)°$
     m∠GFH = $(3x + 25)°$

b. m∠GFH = $(3x + 20)°$
     m∠EFH = $(4x + 80)°$

$$5x - 10 = 3x + 25$$
$$-3x \qquad -3x$$
$$2x - 10 = 25$$
$$+10 \qquad +10$$
$$\frac{2x}{2} = \frac{35}{2}$$
$$x = 17.5$$

x = _____

$$3x + 20 + 3x + 20 = 4x + 80$$
$$6x + 40 = 4x + 80$$
$$-4x \qquad -4x$$
$$2x + 40 = 80$$
$$-40 \qquad -40$$
$$\frac{2x}{2} = \frac{40}{2}$$
$$x = 20$$