

# NOTES 1.5 – ANGLES

**Objective:** \_\_\_\_\_

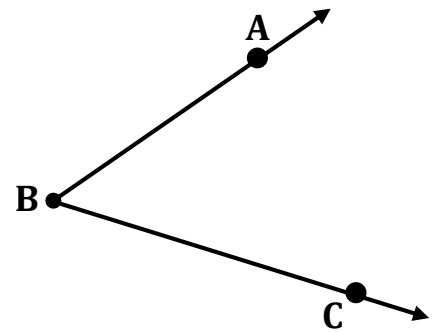
ANGLE:

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**EXAMPLE 1:** Name each of the following.

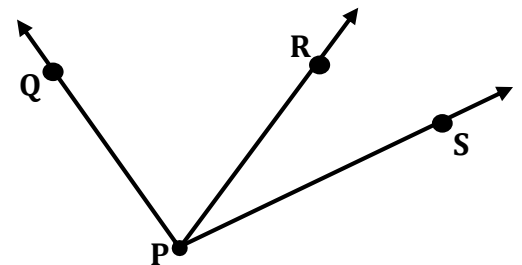
Sides: \_\_\_\_\_

Vertex: \_\_\_\_\_

Name: \_\_\_\_\_



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**EXAMPLE 2:** How does the diagram in EXAMPLE 1 differ from the diagram in this example?



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An angle separates a plane into three distinct parts:

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

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**EXAMPLE 3:** A) Name a point in the interior of  $\angle QPS$  in EXAMPLE 2.

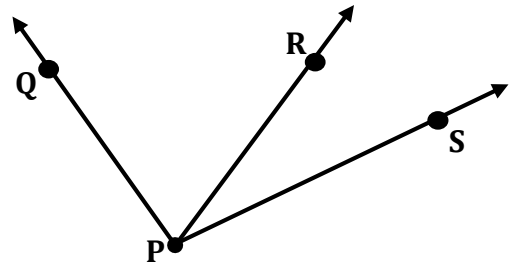
B) Name a point in the exterior of  $\angle QPR$  in EXAMPLE 2.

The diagram in EXAMPLE 2 suggests the following postulate:

**ANGLE ADDITION POSTULATE:**

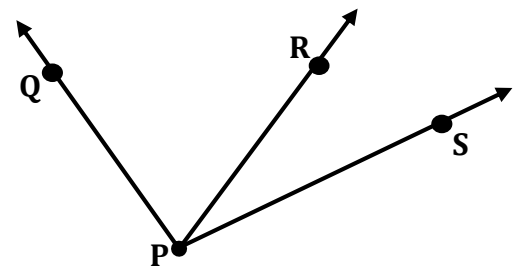
If R is in the interior of  $\angle QPS$ , then  $m\angle QPR + m\angle RPS = m\angle QPS$ .

If  $m\angle QPR + m\angle RPS = m\angle QPS$ , then R is in the interior of  $\angle QPS$ .



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**EXAMPLE 4:** If  $m\angle PQS = 77^\circ$  and  $m\angle PQR = 32^\circ$ , then find  $m\angle RQS$ .



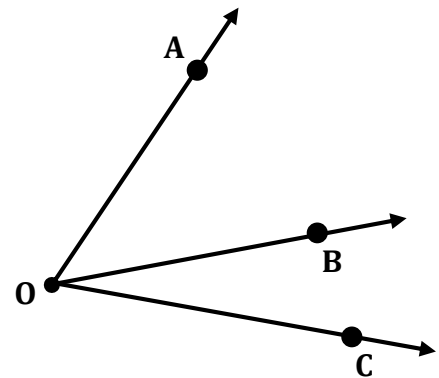
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**EXAMPLE 5:** If  $m\angle AOC = 70^\circ$ ,  $m\angle AOB = (x + 10)^\circ$ , and  $m\angle BOC = x^\circ$ , find:

$x =$  \_\_\_\_\_

$m\angle BOC =$  \_\_\_\_\_

$m\angle AOB =$  \_\_\_\_\_

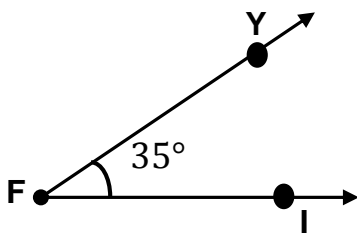


Notes 1.5 (Continued)

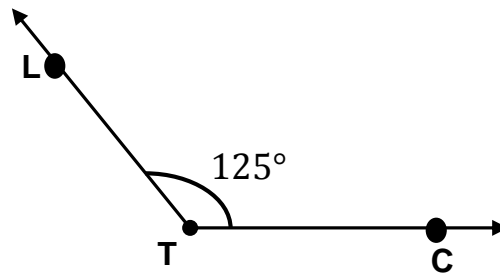
Angles can be classified by their measure in degrees.

- If an angle has a degree measure **less than  $90^\circ$** , it is classified as an **acute angle**.
- If an angle has a degree measure **equal to  $90^\circ$** , it is classified as a **right angle**.
- If an angle has a degree measure **greater than  $90^\circ$** , it is classified as an **obtuse angle**.
- If an angle has a degree measure **equal to  $180^\circ$** , it is classified as a **straight angle**.

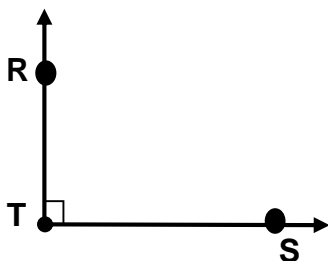
**EXAMPLE 6:** For each of the following angles A) Name it. B) State the measure of the angle. C) Classify it.



NAME: _____ OR _____
MEASURE: _____
CLASSIFICATION: _____



NAME: _____ OR _____
MEASURE: _____
CLASSIFICATION: _____



NAME: _____ OR _____
MEASURE: _____
CLASSIFICATION: _____



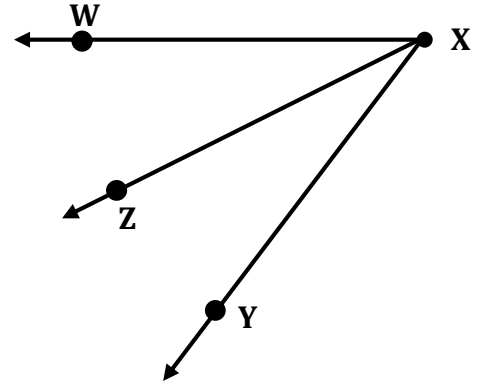
NAME: _____ OR _____
MEASURE: _____
CLASSIFICATION: _____

When angles have the same measure, they are said to be ***congruent***.

ANGLE BISECTOR:

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**EXAMPLE 7:** If  $\overrightarrow{XZ}$  is an angle bisector of  $\angle WXY$ , name the two congruent angles that it forms.



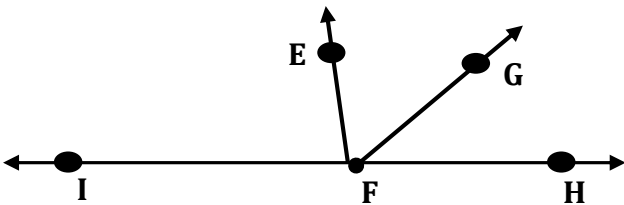
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$\overrightarrow{FG}$  bisects  $\angle EFH$ . Find the value of  $x$  for each of the following.

**EXAMPLE 8:**

$$m\angle EFG = (5x - 10)^\circ$$

$$m\angle GFH = (3x + 25)^\circ$$



**EXAMPLE 9:**

$$m\angle GFH = (3x + 20)^\circ$$

$$m\angle EFH = (4x + 80)^\circ$$

