

## 2-2 Angle Bisectors

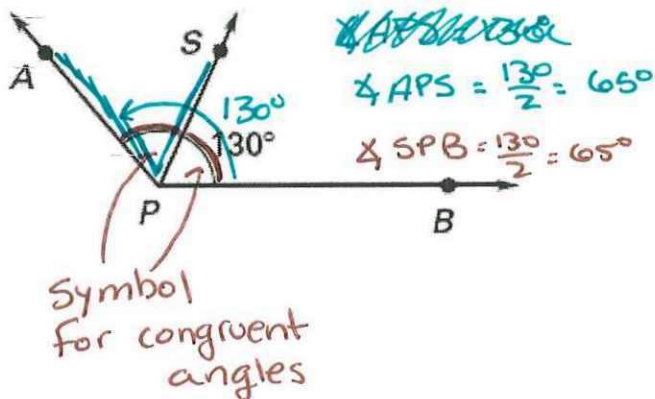
**Objective:** Bisect an angle

**Angle Bisector:** a ray that divides an angle into 2  $\cong$  angles  
 (cutting angles in  $\frac{1}{2}$ ) Congruent

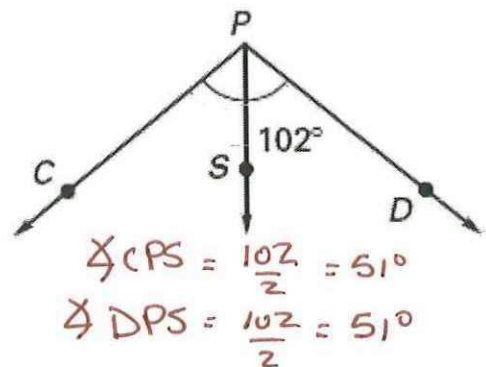
### Examples:

$\overrightarrow{PS}$  bisects the angle. Find the angle measures.

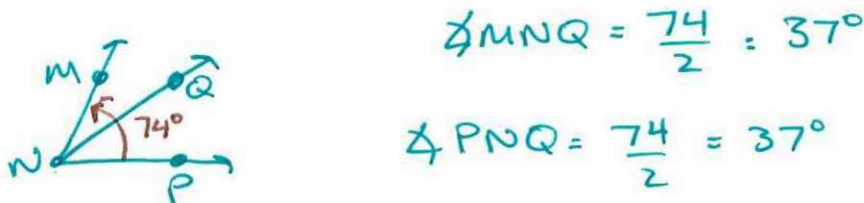
1. Find  $m\angle APS$  and  $m\angle SPB$ .



2. Find  $m\angle CPS$  and  $m\angle DPS$ .

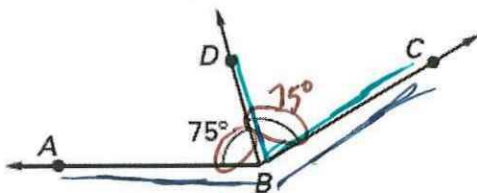


3. If  $NQ$  bisects  $\angle MNP$  and  $m\angle MNP = 74$ .  
 Find  $m\angle MNQ$  and  $m\angle PNQ$



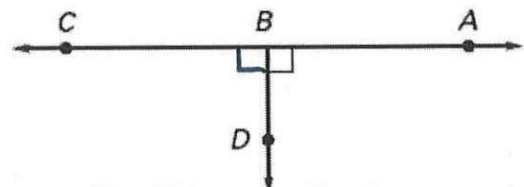
$\overrightarrow{BD}$  bisects  $\angle ABC$ . Find  $m\angle CBD$  and  $m\angle ABC$ . Then determine whether  $\angle ABC$  is acute, right, obtuse, or straight.

4.



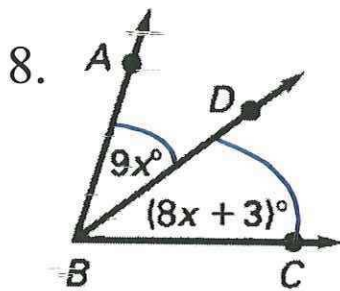
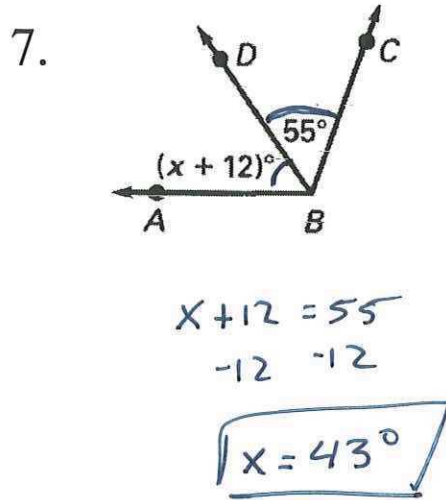
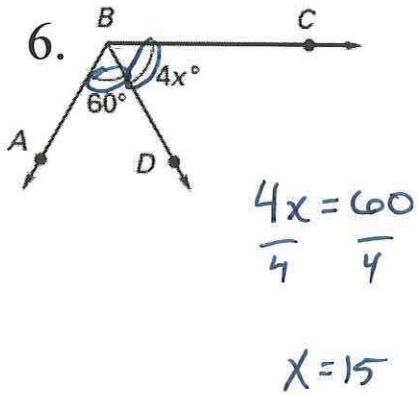
- $\angle CBD = 75^\circ$
- $\angle ABC = 75 + 75 = 150^\circ$
- obtuse

5.



- $\angle CBD = 90^\circ$
- $\angle ABC = 180$
- classify: straight

$\overrightarrow{BD}$  bisects  $\angle ABC$ . Find the value of  $x$ .



$$9x = 8x + 3$$
$$\begin{array}{r} 9x = 8x + 3 \\ -8x \quad -8x \\ \hline x = 3 \end{array}$$

$$x = 3$$

$$9(3) = 27 \checkmark$$

$$8(3) + 3$$
$$24 + 3 = 27 \checkmark$$

p 64 # 1-22 & 28-30