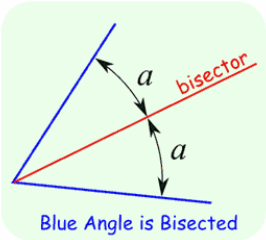
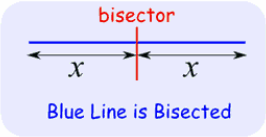
Geometry – Unit 1 Practice **Name: _____!**

Bisecting – Angles & Segments

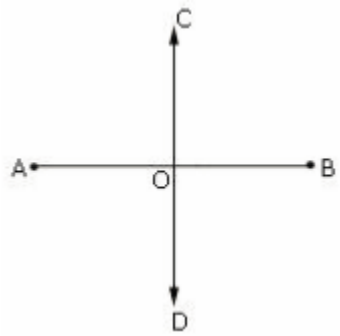
G.CO.D.12 **Date: _____ Pd: ____**





Reminder: The measurements on either side of the bisector are equal.

EX) $\overline{AB}$ **has a length of 12 cm.** $\overleftrightarrow{CD}$ **is the perpendicular bisector. Find the length of** $\overline{AO}$ **and** $\overline{OB}$**.**



Since a bisector divides a figure into two equal parts and

$AB = 12cm$, $AO = OB = \frac{AB}{2} = \frac{12}{2} = 6$.

OR

$AO + OB = 12$, since *AO* = *OB,*

$x + x = 12$ and

$2x = 12$

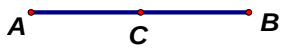
$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

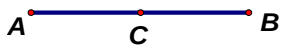
Therefore, $AO = OB = 6cm$.

1) Solve for the unknown measures:

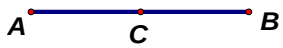
a) *C* is the midpoint of $\overline{AB}$. If *AC* = 20, find *CB*.



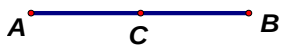
b) *C* is the midpoint of $\overline{AB}$. If *AB* = 40, find *CB*.



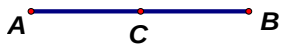
c) *C* is the midpoint of $\overline{AB}$. If *CB* = 100, find *AB*.



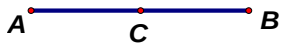
d) *C* is the midpoint of $\overline{AB}$. If *CB* = 3*x*, and *AC = 12*. Find the value of *x*.



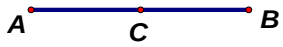
e) *C* is the midpoint of $\overline{AB}$. If *CB* = 5*x*, and *AB = 50*. Find the value of *x*.



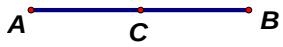
f) *C* is the midpoint of $\overline{AB}$. If *CB = x + 1*, and *AC = 15*. Find the value of *x*.



g) *C* is the midpoint of $\overline{AB}$. If *CB* = 2*x - 4*, and *AC = 20*. Find the value of *x*.

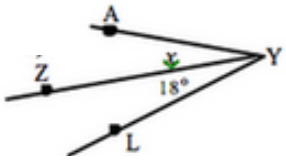


h) *C* is the midpoint of $\overline{AB}$. If *CB* = 2(*x + 3*), and *AC = 32*. Find the value of *x*.

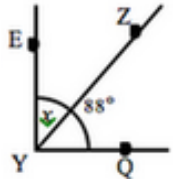


2) Solve for the unknown measures:

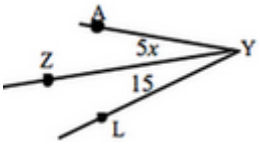
a) $\overrightarrow{YZ}$ is the angle bisector. Find $m\angle AYZ$.



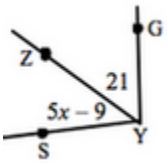
b) $\overrightarrow{YZ}$ is the angle bisector. Find $m\angle EYZ$.



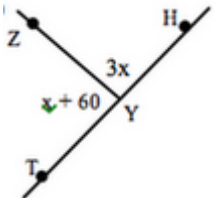
c) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle AYL$.



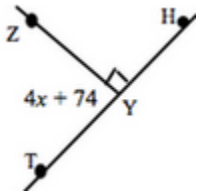
d) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle SYG$.



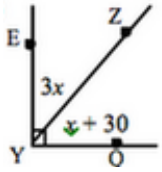
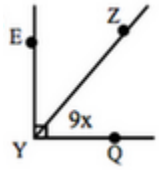
e) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle TYH$.



f) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle TYH$.



g) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle EYQ$.



h) $\overrightarrow{YZ}$ is the angle bisector. Find the value of *x*. Find $m\angle EYQ$.