

Do Now

Sketch each figure.

1. $\overline{CD}$

2. $\overrightarrow{GH}$

3. $\overleftrightarrow{AB}$

4. *line* m

5. *acute* $\angle ABC$

6. $\overline{XY} \parallel \overline{ST}$

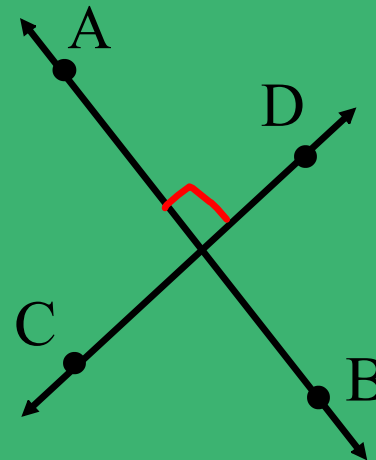
7. $DE = 20$. Point C is the midpoint of $\overline{DE}$. Find CE.

Geometry

Ch. 1 Handout 1.7

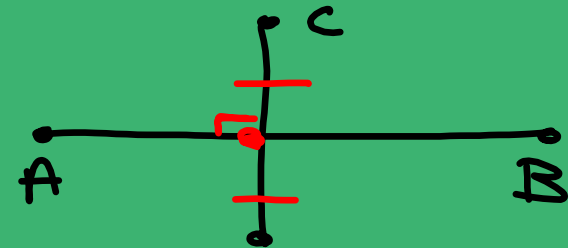
Perpendicular lines are two lines that intersect to form right angles. $\perp$ means "is perpendicular to"

Given: $\overleftrightarrow{AB} \perp \overleftrightarrow{CD}$



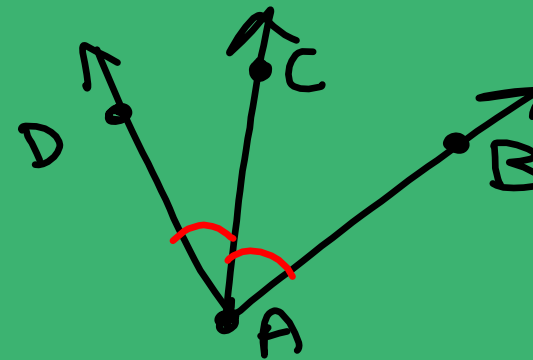
A perpendicular bisector of a segment is a line, segment, or ray that is perpendicular to the segment at its midpoint; therefore, bisecting the segment into 2 congruent segments

$\overline{AB}$ is the $\perp$ bisector $\overline{CD}$



An **angle bisector** is a ray that divides an angle into two congruent angles

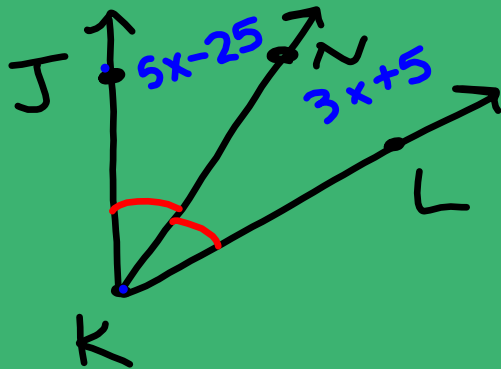
$\vec{AC}$ is the $\angle$ bisector of $\angle DAB$



Finding Angle Measure:

1. $\overrightarrow{KN}$ bisects $\angle JKL$, $m\angle JKN = 5x - 25$ and $m\angle NKL = 3x + 5$.

Solve for x , $m\angle JKN$, $m\angle NKL$, and $m\angle JKL$.



$$\begin{array}{r} 5x - 25 = 3x + 5 \\ -3x \quad \quad -3x \end{array}$$

$$\begin{array}{r} 2x - 25 = 5 \\ + 25 \quad + 25 \end{array}$$

$$2x = 30$$

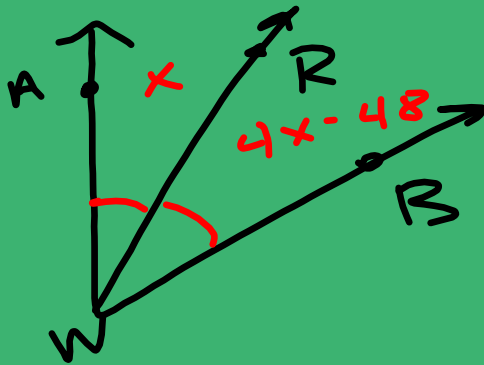
$$x = 15$$

$$\begin{array}{l} x = 15 \\ m\angle JKN = 50 \\ m\angle NKL = 50 \\ m\angle JKL = 100 \end{array}$$

$$m\angle JKN = 5(15) - 25 = 50$$

$$m\angle NKL = 3(15) + 5 = 50$$

2. $\overrightarrow{WR}$ bisects $\angle AWB$ and $m\angle AWR = x$ and $m\angle BWR = 4x - 48$. Find $m\angle AWB$.



$$x = 4x - 48$$

$$-3x = -48$$

$$x = 16$$

$$m\angle AWR = 16$$

$$m\angle BWR = 16$$

$$m\angle AWB = 32$$

3. $\overline{XZ}$ is the perpendicular bisector of $\overline{AB}$.
Find x , AC , and CB .

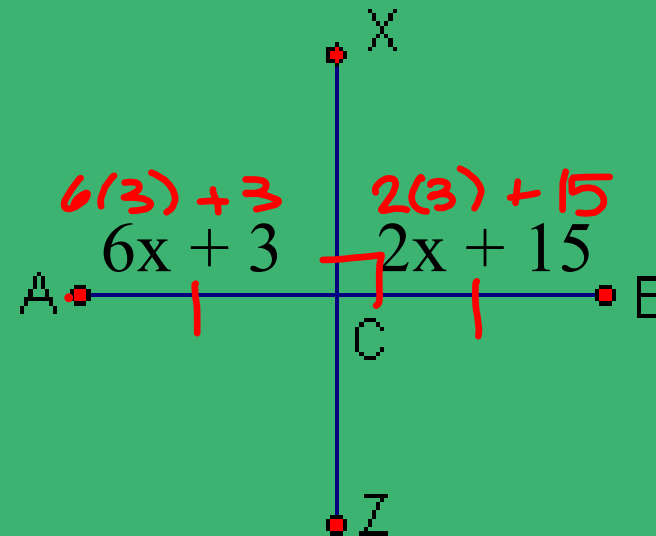
$$\begin{array}{r} 6x + 3 = 2x + 15 \\ -2x \quad -3 \quad -2x \quad -3 \\ \hline 4x = 12 \end{array}$$

$$4x = 12$$

$$x = 3$$

$$AC = 21$$

$$CB = 21$$



Assignments: Worksheet #2 (section 1.7)