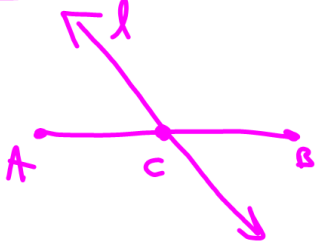
1.3 Midpoint & Distance Formulas

Cut $\overline{AB}$ in half.
(bicycle
2 - wheel)

Called bisector
(2 = parts)

*D is the segment bisector of $\overline{AB}$
So $\overline{AD} \cong \overline{DB}$
*D is also called the midpoint



l is the bisector of $\overline{AB}$
- C is the midpoint
- $\overline{AC} \cong \overline{CB}$
(cuts $\overline{AB}$ in half)
- l is the segment bisector

If AC = 12,
CB = ? 12
AB = ? 24

Example

Point M is the midpoint of $\overline{VW}$.
Find length of $\overline{VM}$.

Need an equation or a relation

$\overline{VM} \cong \overline{MW}$ or $VM = MW$

* Know $VM = 4x-1$
$MW = 3x+3$

(VM) (MW)

$4x-1 = 3x+3$

+1 +1

$4x = 3x+4$

$-3x \quad -3x$

$1x = 4$

$x = 4$

(plug in for x)

So $VM = 4x-1$

$= 4 \cdot 4 - 1$

$16 - 1$

$= 15$

$MW = 3x+3$

$= 12+3$

$= 15$