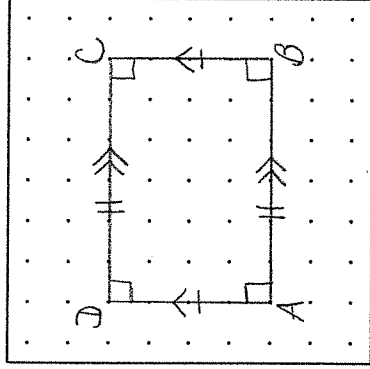


DESCRIPTION OF RECTANGLE	DIAGRAM OF RECTANGLE
DIAGONAL INVESTIGATION #2 DO THE DIAGONALS BISECT EACH OTHER? <i>Yes</i>	DIAGONAL INVESTIGATION #1 ARE THE DIAGONALS CONGRUENT? <i>Yes</i>
DIAGONAL INVESTIGATION #4 DO THE DIAGONALS BISECT VERTEX ANGLES? <i>No</i>	DIAGONAL INVESTIGATION #3 ARE THE DIAGONALS PERPENDICULAR? <i>No</i>

A rectangle is a

parallelogram with 4 right (90°) angles.

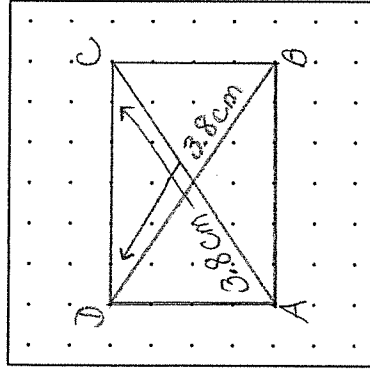
The opposite sides are parallel and the opposite sides are congruent.



$$\overline{AC} = 3.8 \text{ cm}$$

$$\overline{BD} = 3.8 \text{ cm}$$

Since $\overline{AC}$ is congruent to $\overline{BD}$, then the diagonals of rectangles are congruent.



$$\overline{DE} = 1.9 \text{ cm}$$

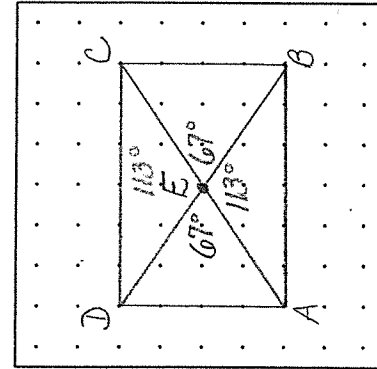
$$\overline{BE} = 1.9 \text{ cm}$$

Since $\overline{DE} = \overline{BE}$ then diagonal $\overline{DB}$ has been bisected.

$$\overline{AE} = 1.9 \text{ cm}$$

$$\overline{CE} = 1.9 \text{ cm}$$

Since $\overline{AE} = \overline{CE}$ then diagonal $\overline{AC}$ has been bisected.



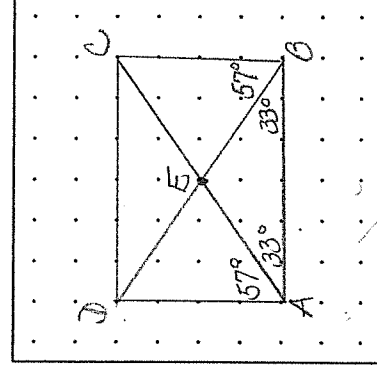
$$m\angle DEC = 113^\circ$$

$$m\angle CEB = 67^\circ$$

$$m\angle BEA = 113^\circ$$

$$m\angle AED = 67^\circ$$

In order for the diagonals to be perpendicular, the angles formed at the intersection of the diagonals must be 90°. Since none of the angles are 90°, the diagonals are not perpendicular.



$$m\angle DAC = 57^\circ$$

$$m\angle CAB = 33^\circ$$

Since $\angle DAC$ is not congruent to $\angle CAB$, then $\angle DAB$ (which is a vertex angle) has not been bisected.

$$m\angle ABD = 33^\circ$$

$$m\angle DBC = 57^\circ$$

Since $\angle ABD$ is not congruent to $\angle DBC$, then $\angle ABC$ (which is a vertex angle) has not been bisected.

