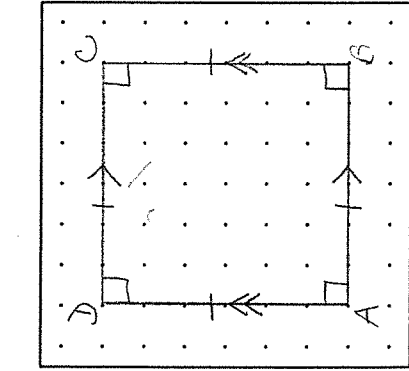


DESCRIPTION OF SQUARE		DIAGRAM OF SQUARE
DIAGONAL INVESTIGATION #2 DO THE DIAGONALS BISECT EACH OTHER? <i>Yes</i>		DIAGONAL INVESTIGATION #1 ARE THE DIAGONALS CONGRUENT? <i>Yes</i>
DIAGONAL INVESTIGATION #4 DO THE DIAGONALS BISECT VERTEX ANGLES? <i>Yes</i>		DIAGONAL INVESTIGATION #3 ARE THE DIAGONALS PERPENDICULAR? <i>Yes</i>

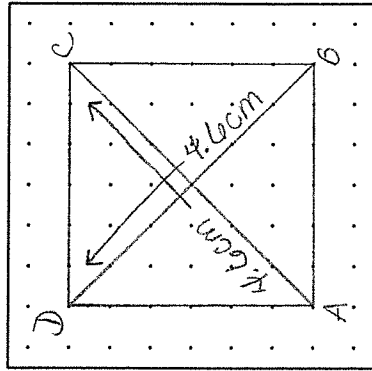


A square is a parallelogram with opposite sides parallel. The 4 sides of the square are congruent. The 4 angles are 90° right angles.

$$\overline{AC} = \underline{4.6\text{cm}}$$

$$\overline{BD} = \underline{4.6\text{cm}}$$

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



$m\overline{DE} = \underline{2.3\text{cm}}$
 $m\overline{BE} = \underline{2.3\text{cm}}$
 Since $m\overline{DE} = m\overline{BE}$ then diagonal $\overline{DB}$ has been bisected.
 $m\overline{AE} = \underline{2.3\text{cm}}$
 $m\overline{CE} = \underline{2.3\text{cm}}$
 Since $m\overline{AE} = m\overline{CE}$ then diagonal $\overline{AC}$ has been bisected.

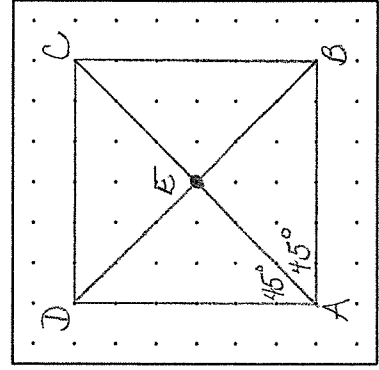
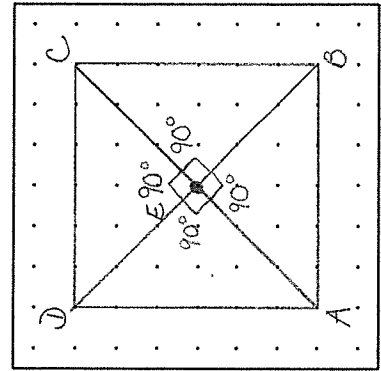
$$m\angle DEC = \underline{90^\circ}$$

$$m\angle CEB = \underline{90^\circ}$$

$$m\angle BEA = \underline{90^\circ}$$

$$m\angle AED = \underline{90^\circ}$$

In order for the diagonals to be perpendicular, the angles formed at the intersection of the diagonals must be 90° . Since all of these angles are 90° , the diagonals are perpendicular.



$m\angle DAC = \underline{45^\circ}$
 $m\angle CAB = \underline{45^\circ}$
 Since $\angle DAC$ is congruent to $\angle CAB$, then $\angle DAB$ (which is vertex angle) has been bisected.
 $m\angle ABD = \underline{45^\circ}$
 $m\angle DBC = \underline{45^\circ}$
 Since $\angle ABD$ is congruent to $\angle DBC$, then $\angle ABC$ (which is a vertex angle) has been bisected.