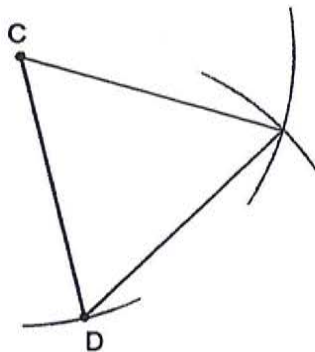
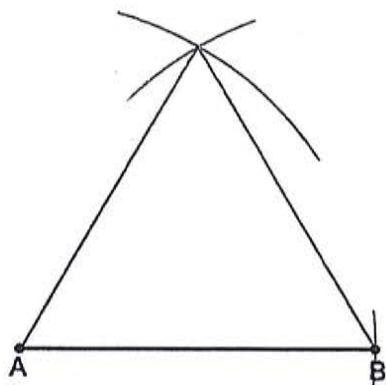


OBJECTIVE: Am I ready to answer this question on a quiz or test?

1. Using your compass, construct equilateral triangles with bases of \overline{AB} and \overline{DE} as shown. Leave all marks.

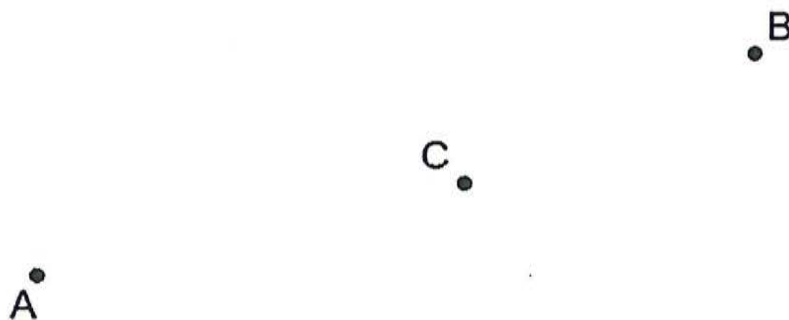


2. Find the values of AB, BC, and AC in the diagram with your ruler. Round your answers to the nearest millimeter.

AB = 117 mm

BC = 66 mm

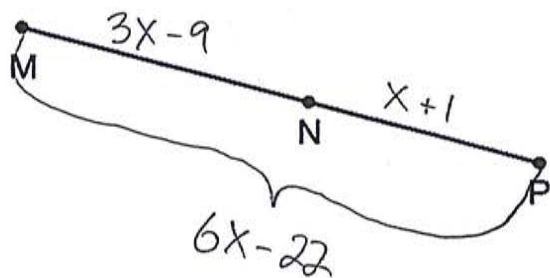
AC = 52 mm



3. Based on your values for found above for AB, BC, and AC, give an explanation for why points A, B, and C are NOT collinear.

$$\overline{AC} + \overline{CB} \neq \overline{AB}$$

4. In the diagram below, points M, N, and P are collinear. If $MN = 3x - 9$, $NP = x + 1$, and $MP = 6x - 22$, solve for the value of x and each line segment. The diagram is not drawn to scale.



$$3x - 9 + x + 1 = 6x - 22$$

$$4x - 8 = 6x - 22$$

$$14 = 2x$$

$$x = 7$$

$$MN = 12$$

$$NP = 8$$

$$MP = 20$$

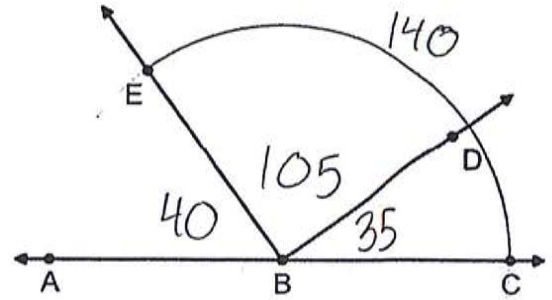
- Using your answers from #4, is point N the midpoint of \overline{MP} ? Explain your answer.

No b/c $\overline{MN} \neq \overline{NP}$

6. In the diagram, it is known that \overline{ABC} , $m\angle EBC = 140$, and $m\angle CBD = 35$. The diagram is not drawn to scale.

(a) Find $m\angle EBD$ and $m\angle ABE$

105 40



(b) Is $\overline{BE} \perp \overline{BD}$? Justify based on part (a)

No $\angle EBD$ is not a right \angle

7. $\angle DAY$ is a right angle. If $m\angle DAY = \frac{1}{2}x + 34$, then solve for value of x algebraically.

90°

$$\frac{1}{2}x + 34 = 90$$

$$\frac{\frac{1}{2}x}{\frac{1}{2}} = \frac{56}{\frac{1}{2}}$$

$$x = 112$$

8. If $m\angle TMI = 5x + 2$ and $x = 20$, then classify $\angle TMI$ as acute, obtuse, right, or straight. Give an explanation.

$$5(20) + 2$$

$$102$$

Obtuse b/c it's between

$$90 \text{ \& } 180.$$

9. Two angles, $\angle A$ and $\angle B$, are supplementary to one another. If $\angle B$ is 30 degrees more than $\angle A$, find the measure of both angles.

$$\angle A = x$$

$$x + x + 30 = 180$$

$$\angle B = x + 30$$

$$2x + 30 = 180$$

$$2x = 150$$

$$x = 75$$

$$m\angle A = 75$$

$$m\angle B = 105$$

10. In the diagram, points A, B, and C are collinear and $\overline{BE} \perp \overline{AC}$.

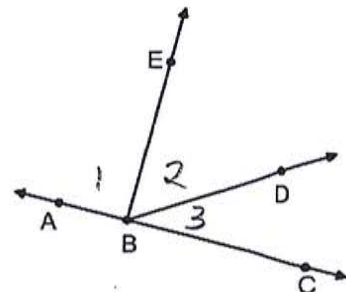
(a) State one pair of complementary angles.

$$\angle 2 \text{ \& } \angle 3$$

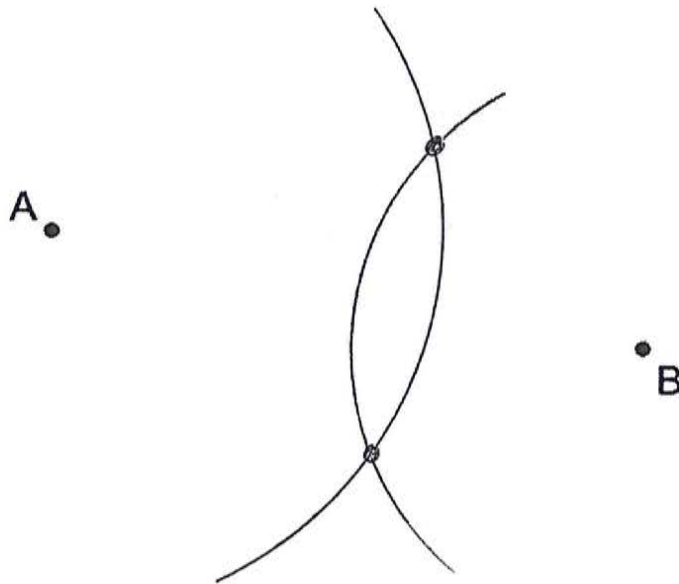
(b) State two pairs of supplementary angles.

$$\angle 1 \text{ \& } \angle EBC$$

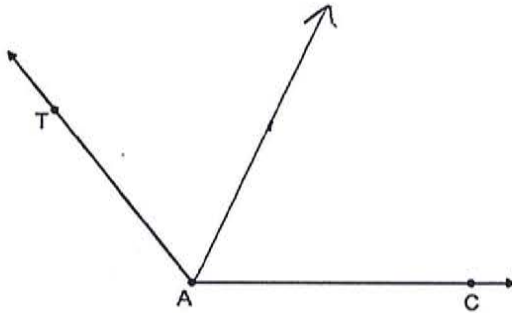
$$\angle 3 \text{ \& } \angle ABD$$



11. Use your compass to find two points that are 2 inches away from point A and 1.5 inches away from point B.



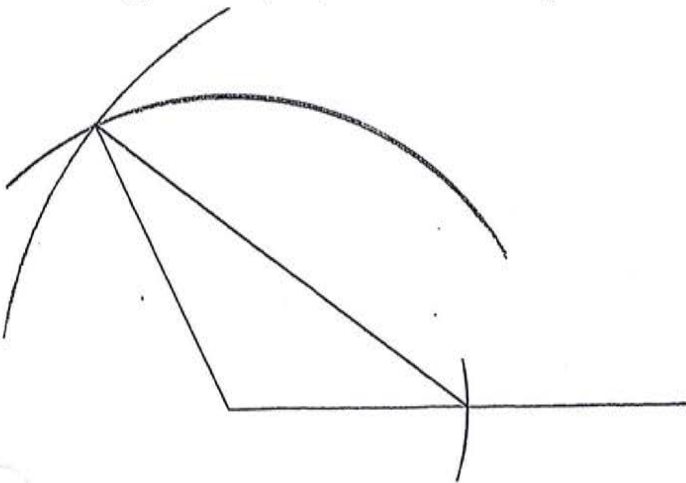
12. Use your protractor to draw an angle bisector of $\angle CAT$. State the number of degrees in $\angle CAT$ and one of the bisected angles.



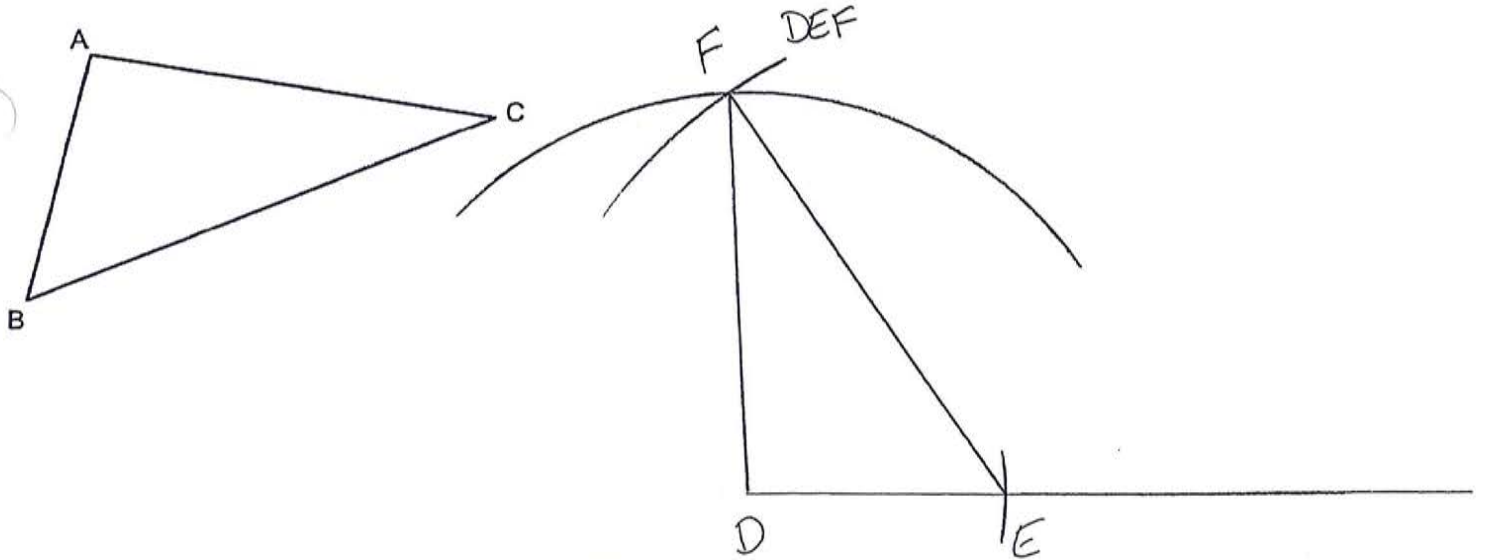
$$\angle CAT = 130$$

$$\text{bisected } \angle = 65$$

13. Using your compass, construct a triangle with side lengths of 3 cm, 4 cm, and 6 cm.



14. Using your compass, construct $\triangle DEF$ such that $\triangle DEF \cong \triangle ABC$.



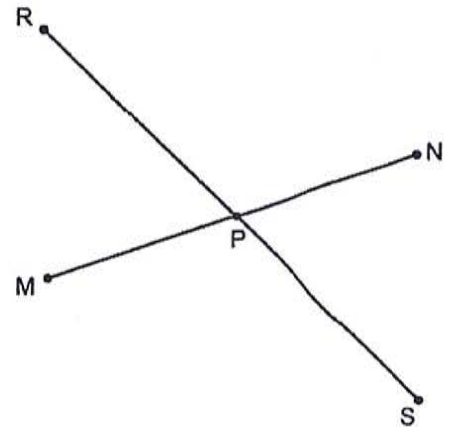
15. In the diagram, it is given that \overline{RS} bisects \overline{MN} at point P. Which of the following statements below does not have to be true? Explain your choice without using your ruler to measure.

(1) $MP = NP$ ✓

(2) $RP + PS = RS$ ✓

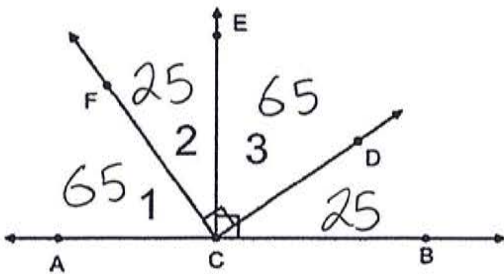
(3) P is the midpoint of \overline{RS} ✗

(4) P is the midpoint of \overline{MN} ✓

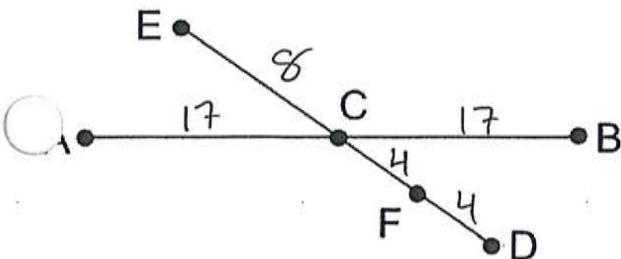


\overline{RS} does the cutting

6. In the diagram, $\overline{CE} \perp \overline{AB}$ and $\overline{CF} \perp \overline{CD}$. If $m\angle BCD = 25$, then find the $m\angle 1$, $m\angle 2$, and $m\angle 3$.



17. Given \overline{AB} & \overline{DE} bisect each other. If F is the midpoint of \overline{DC} , $AB = 34$ and $DE = 16$, find the value of $FC + CB$.



$FC + CB$

$4 + 17$

$\boxed{21}$