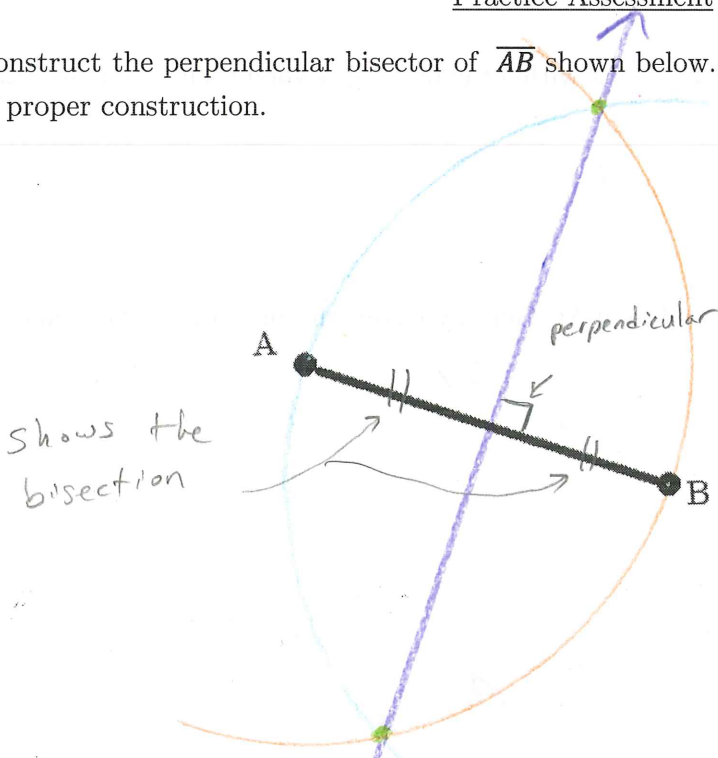


1. Construct the perpendicular bisector of \overline{AB} shown below. Leave all circular arcs/markings as evidence of proper construction.



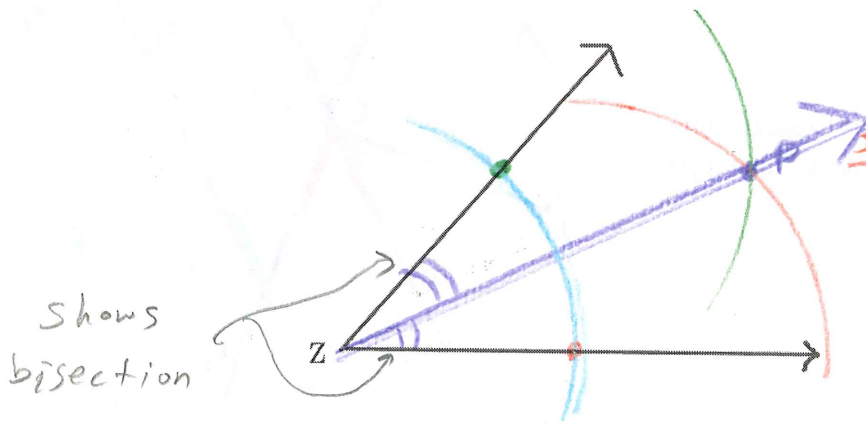
step 1: Needle @ A, Pencil @ B, mark circular arc.

step 2: Needle @ B, pencil @ A, mark circular arc.

step 3: mark intersection points

step 4: construct line from step 3's points

2. Construct the angle bisector \overline{ZP} for $\angle Z$ below. Leave all circular arcs/markings as evidence of proper construction.



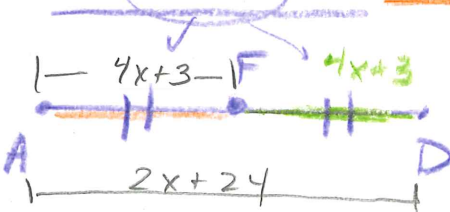
step 1: Needle at Z, mark arbitrary arc that crosses both rays.

step 2: Needle at intersection, mark arbitrary arc in the interior of angle.

step 3: Needle at intersection SAME COMPASS WIDTH AS STEP 2 mark an arc, crossing step 2's.

step 4: mark intersection, create \overline{ZP} .

3. F is the midpoint of AD. $AF=4x+3$, $AD=2x+24$. What is the length of AD?



Since F is the midpoint, $\overline{AF} \cong \overline{FD}$.

Since $AF = 4x+3$, FD is ALSO $= 4x+3$.

By the SEGMENT ADDITION POSTULATE:

$$4x+3 + 4x+3 = 2x+24$$

$$\begin{array}{r} 8x + 6 \\ -2x - 6 \\ \hline 6x = 18 \end{array}$$

$$6x = 18 \rightarrow x = 3$$

like combine terms

Plug into AD

$$2(3) + 24$$

$$6 + 24$$

$$30$$

"Mid point" implies that $\overline{AF} \cong \overline{FD}$

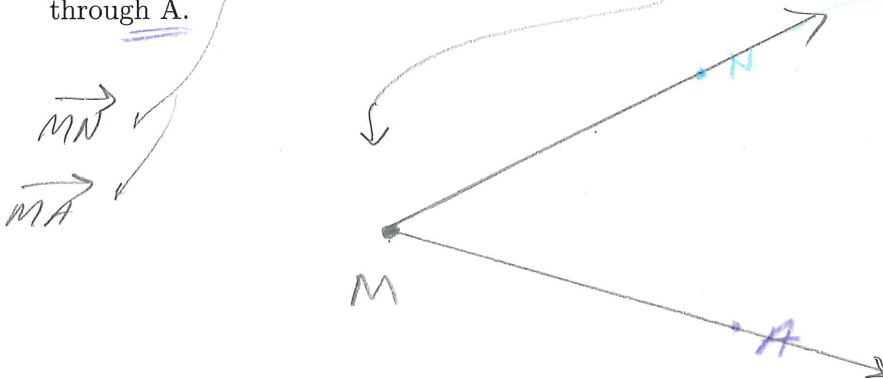
CO-A1a

undefined terms

4. The part of a straight line connecting two points without extending beyond them describes what geometric term?

line segment

5. Draw and label two rays with a shared endpoint M. One ray passes through N and the other passes through A.



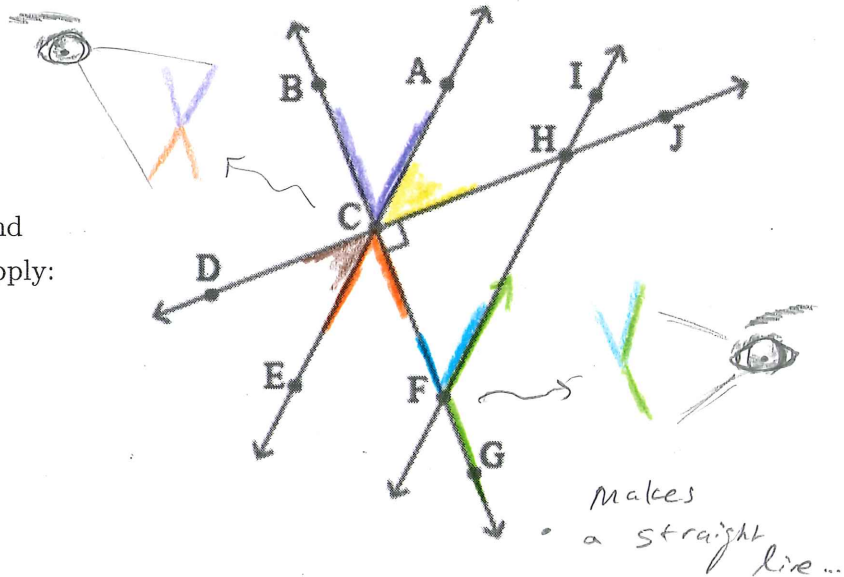
CO-A1c

6. Name the angle which is vertical to $\angle BCA$.

$\angle ECF$
(or $\angle FCE$)

7. Which of the following describe(s) $\angle GFH$ and $\angle CFH$ as an angle pair? Choose ALL that apply:

- complementary angles
- supplementary angles
- vertical angles
- adjacent angles
- linear pair



makes a straight line...

- Attached...
- totals 180°...

8. Name a pair of complementary angles.

[Some] Possible answers

- $\angle BCA$ and $\angle ACH$
- $\angle ECF$ and $\angle DCE$