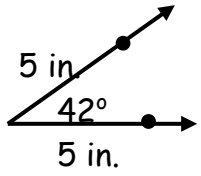
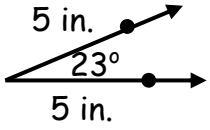
G5-2 investigation Name _____

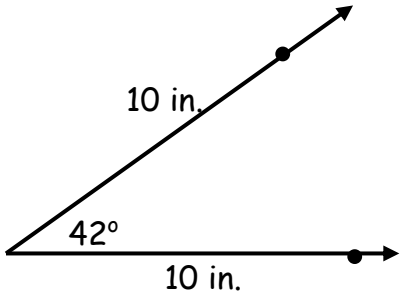
Copying and angle and bisecting an angle

Copying an angle: When you copy an angle you construct a congruent angle.

1. Which of the angles below are congruent?

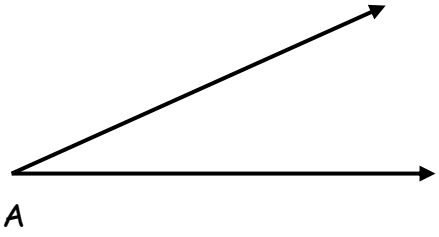


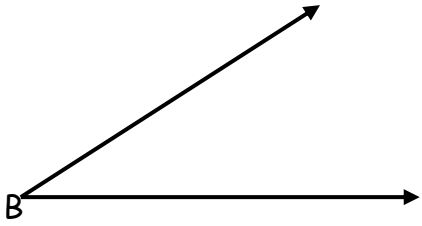


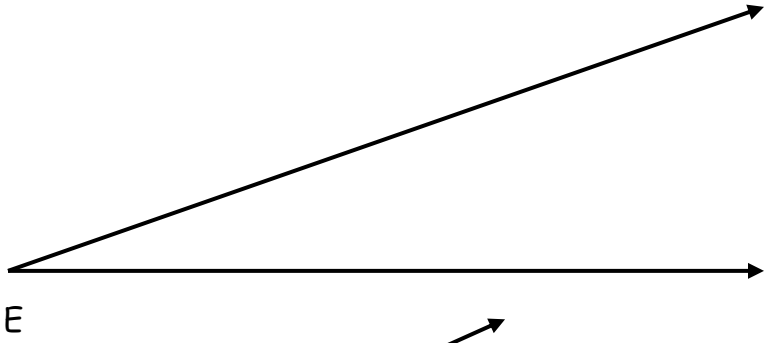


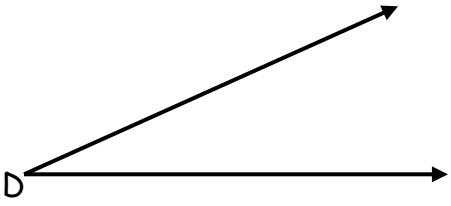
How do you know? _____

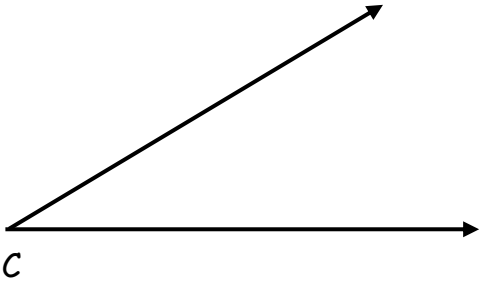
2. Using only your compass, identify the angle that is congruent to $\angle A$.
Hint: If two angles are congruent, you can construct two congruent isosceles triangles.







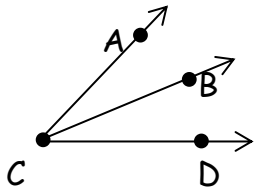




3. Copy $\angle A$ onto $\overrightarrow{MN}$ by constructing two congruent isosceles triangles.

4. Construct ∠F congruent to ∠B above:

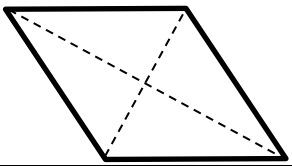
<u>Construct an angle bisector</u>:



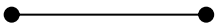
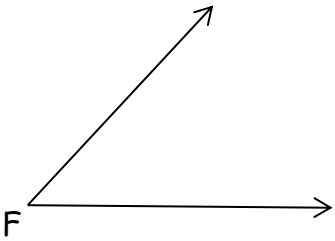
$\overrightarrow{CB}$ is a bisector of $\angle ACD$. What do you know about $\angle ACB$ and $\angle BCD$?

Mark the diagram to show this.

Diagonals of a rhombus also bisect the angles of the rhombus.



Mark the rhombus to show this:

Instructions:	Construction:
<u>Construct rhombus FGHI</u> 1. Using $\angle F$ construct $\overline{FI}$ and $\overline{FG}$ congruent to the segment below.  Construct $\overline{GH}$ and $\overline{IH}$, also congruent to the segment above. Draw segment $\overline{FH}$.	 What is the relationship between $\angle GFH$ and $\angle IFH$?
2. Using what you saw in #1, Construct the angle bisector of $\angle R$.