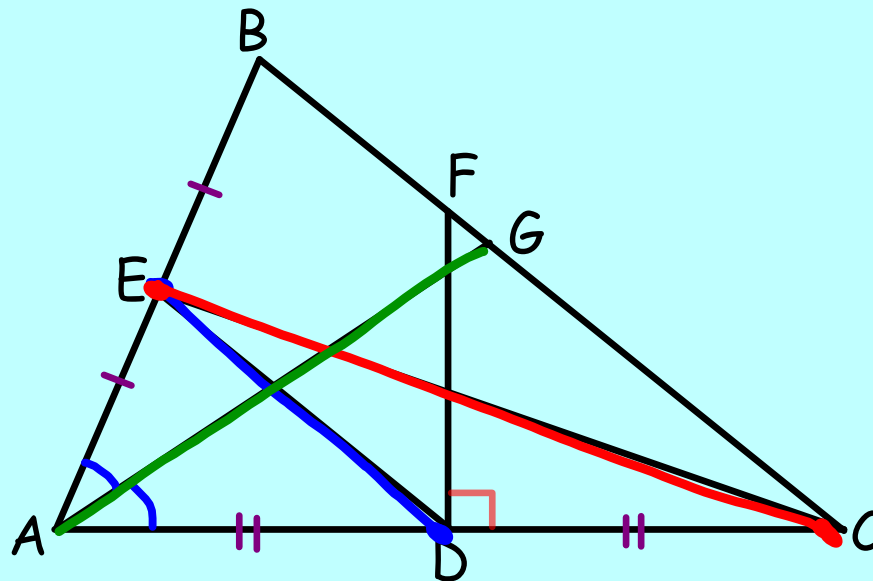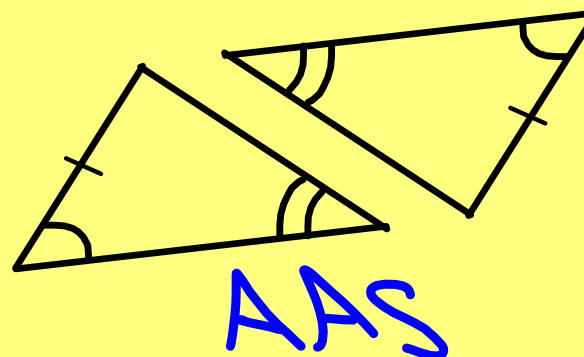# 11/21/19 - Warm Up Problem
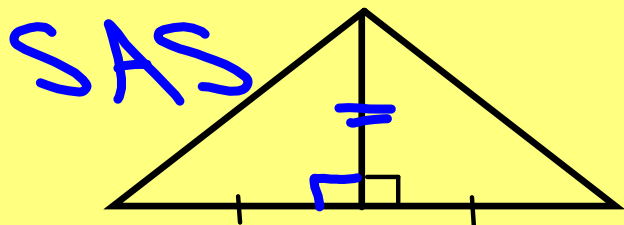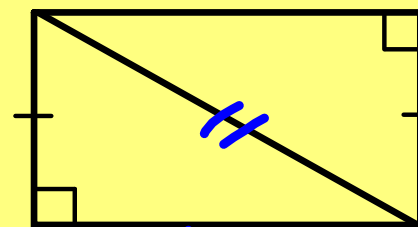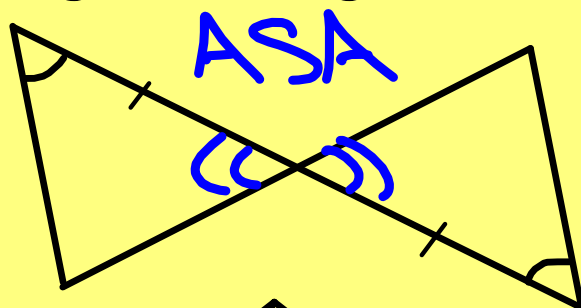
Find a segment in Triangle ABC that fits each description.

1. Midsegment $\mathcal{E}D$

2. Median $\mathcal{E}C$

3. Angle Bisector AG

4. Perpendicular Bisector FD

<u>**QUIZ REVIEW**</u>

State the postulate or theorem that proves each pair of triangles is congruent.
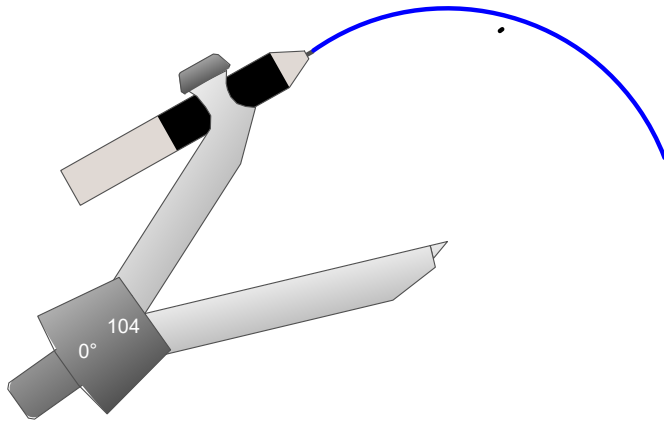

ASA

SAS

AAS

Concept 12 - Geometric Constructions

Goal: Draw angle and perpendicular bisectors using compass and straight-edge construction techniques

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**ARC:** part of the outside edge of a circle

104
0°

A lot of the steps in constructions ask you to only make an arc instead of a whole circle to keep your drawing free of marks you don't need.

Sometimes you will need to make several arcs with the same compass setting in one drawing.

<u>Construct a Congruent Segment</u>

1. Draw a ray
2. Open compass the length of AB
3. Use compass to mark length on ray
4. Draw in other endpoint

A   B
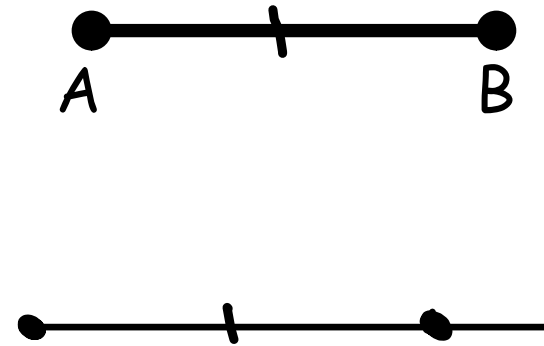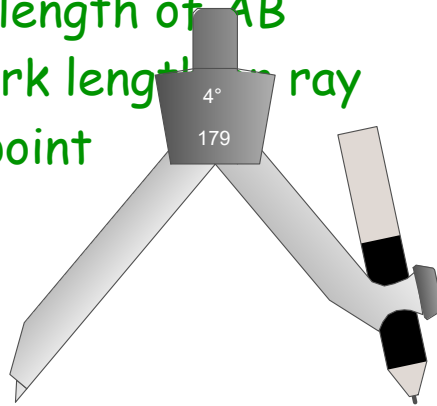
Construct a Congruent Angle

Construct and angle congruent to the given angle.

1. Draw a ray

2. With compass point on vertex, draw an arc that intersects both sides of the angle

3. With the same compass setting draw an arc on your ray

4. Use compass to measure the width of the angle where the intersects it. Mark the same width on your ray.

5. Draw in the other side of the angle.
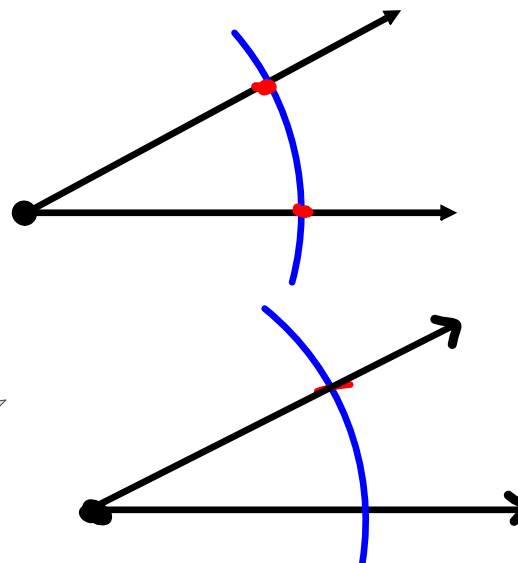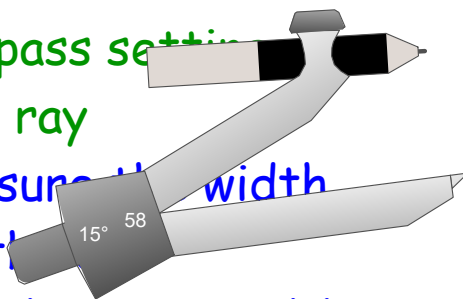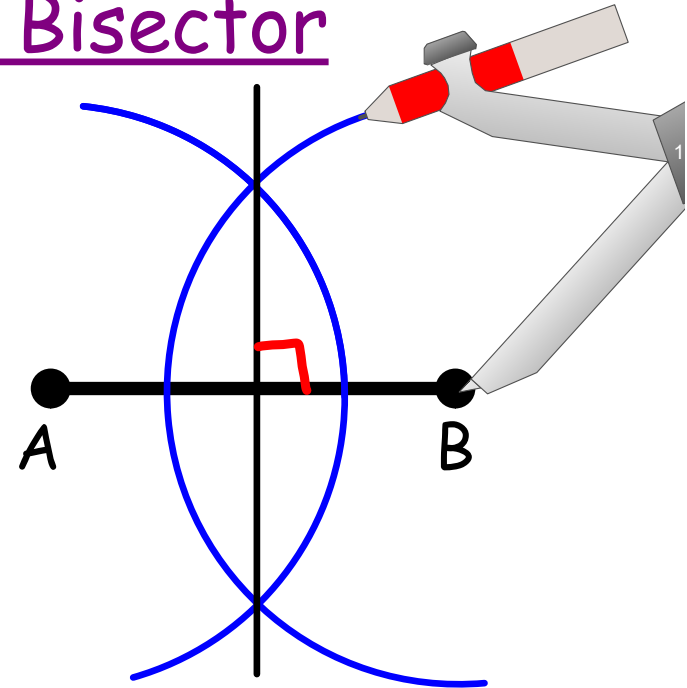
Do you remember what word we filled into this theorem?

<u>Perpendicular Bisector Theorem</u>

If a point is on the perpendicular bisector of a segment, then it is __equidistant__ from the endpoints.
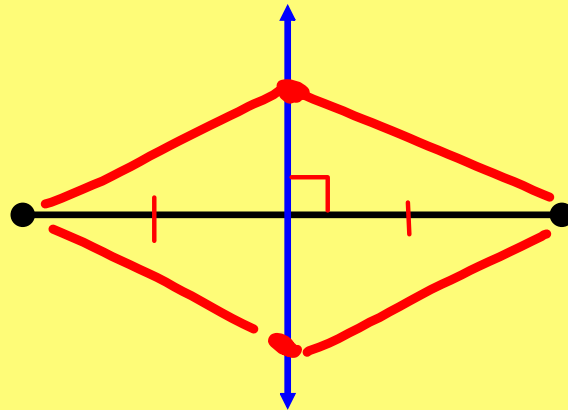
Construct the Perpendicular Bisector

1. Put the compass point on A and open the compass to wider than half of AB. Draw a long arc through AB.

2. With the same compass setting, put the compass point on B, and draw another long arc through AB

3. The arcs intersect in two points. Connect those two points with a line.

Do you remember what word we filled in this theorem?

<u>Angle Bisector Theorem</u>

If a point is on the bisector of an angle, then the point is <u>equidistant</u> from the sides of the angle.
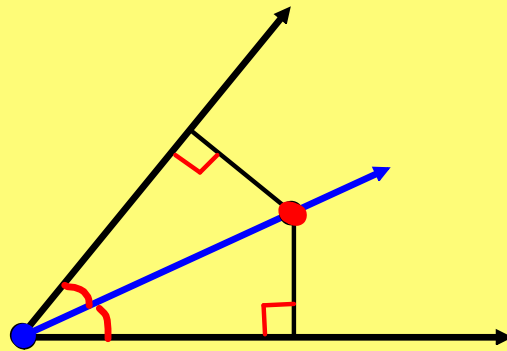
Construct the Angle Bisector

1. With compass point on A, draw an arc that intersects both sides of the angle. Label intersection points B and C.

2. Put compass point on B. Draw an arc on the interior of the angle. With same setting, put compass point on C and draw an arc that intersects first arc.

3. Connect A to the intersection point of two arcs.

A•
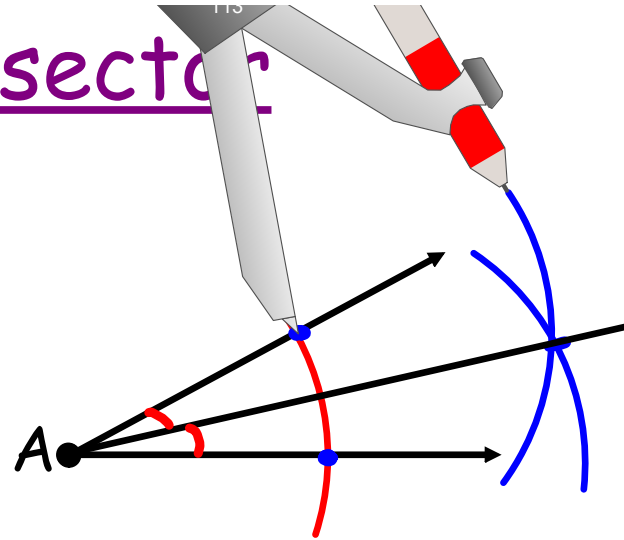
Assignment:

Do the Practice Problems on the back of your notes

Turn this paper in before you leave today!

I will check it over and give it back to you Monday.