DO NOW

Hints for using a compass:

• Be sure to use a sharpened pencil

• If your compass requires that you insert a pencil, use a small pencil (short) as it will make it easier to balance the compass.

• Be sure to adjust your compass so that the leg with the sharp point and the leg with the pencil lead are the same length. Close the compass to see if the two legs are the same length.

• Place several sheets of paper under your worksheet. Allowing the compass point to pierce the papers will help stabilize the compass and prevent it from slipping.

• Hold the compass lightly and try to keep your wrist flexible.

• If you have trouble moving your wrist when drawing circles, try rotating the paper under the compass.

• Try to maintain a constant, but light, pressure on the compass. Do not press down too hard on the paper.

Sep 24-6:58 AM

Segment *AB*: set consisting of point *A*, *B* and all points on the line between *A* and *B*

Radius: segment from the center of a circle to any point on a circle

Circle: set of all points that are distance *r* (radius) from point *C* (center of circle)

Sep 24-6:59 AM

Copying a Line Segment

1. Using a straightedge, draw a reference line, if one is not provided.

2. Draw a dot on the reference line to mark your starting point for the construction.

3. Place the point of the compass on point *A* on the given figure.

4. Stretch the compass so that the pencil is exactly on *B*. Make a small arc through *B*.

(This small arc will show that you measured the length of the segment with your compass.)

5. Without changing the span of the compass, place the compass point on the starting point (dot) on the reference line and swing the pencil to create an arc crossing the reference line.

6. Label your copy.
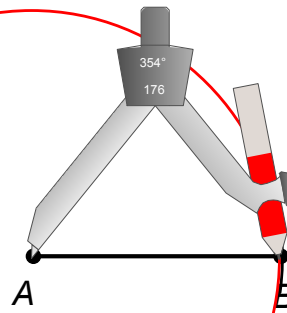
Sep 24-8:32 AM

Constructing an Equilateral Triangle (option 1)

1. Place your compass point on *A* and "measure" the distance to point *B*. Swing an arc of this size above (or below) the segment.

2. Without changing the span on the compass, place the compass point on *B* and swing the same arc, intersecting with the first arc.

3. Label the point of intersection as the third vertex of the equilateral triangle.

4. Draw the triangle by connecting the three vertices using a straightedge

Sep 24-6:58 AM

2
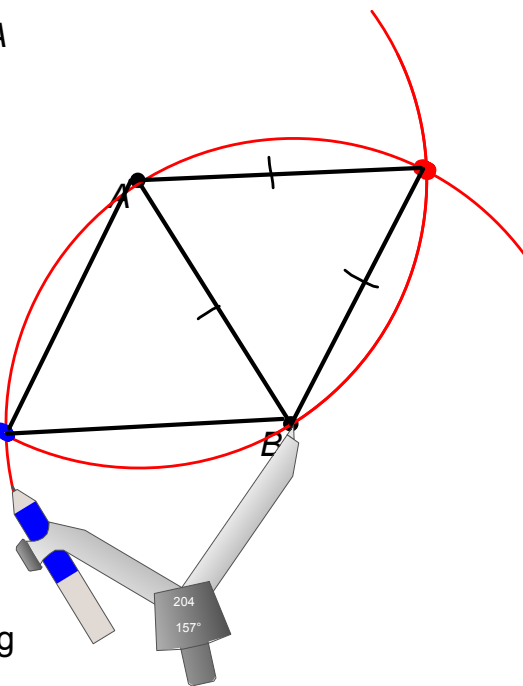
Constructing a ^regular Hexagon (option 1)

1. Place your compass point on the paper and draw a circle. (Keep this compass span!)
2. Place a dot, labeled *P*, anywhere on the circumference of the circle

3. **Without changing the span on the compass,** place the compass point on *P* and swing a small arc crossing the circumference of the circle.

4. **Without changing the span on the compass,** move the compass point to the intersection of the previous arc and the circumference and make another small arc on the circumference of the circle.
5. Keep repeating this process of "stepping" around the circle until you return to point *P*.

6. Connect to each arc on the circle forming the regular hexagon.
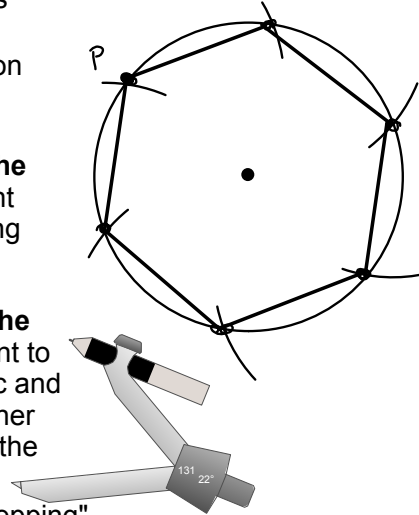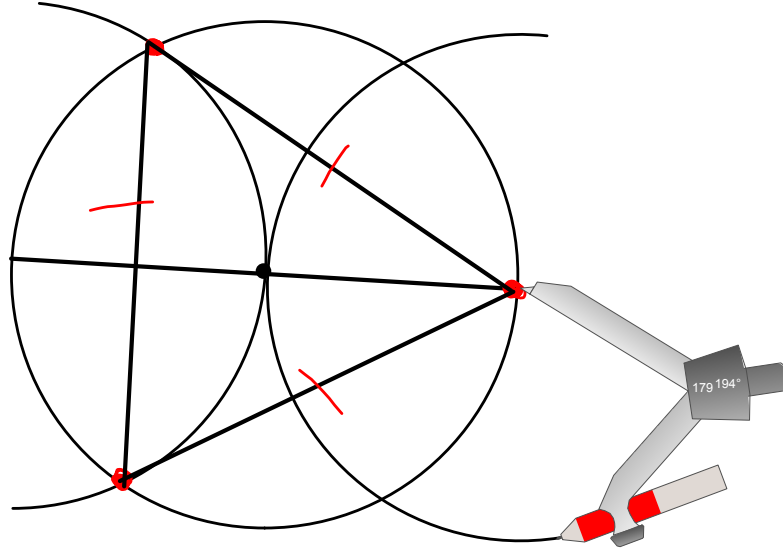
Sep 24-7:13 AM

Constructing a Hexagon (option 2)

1. Draw a point and a circle using that point as its center

2. Draw a diameter of the circle (segment *AB*)

3. Set the width of the compass as the radius of the circle

4. Draw an arc from point *A* to intersect the circle twice

5. Repeat and draw an arc from point *B*

6. Connect the arcs using a ruler to complete the hexagon
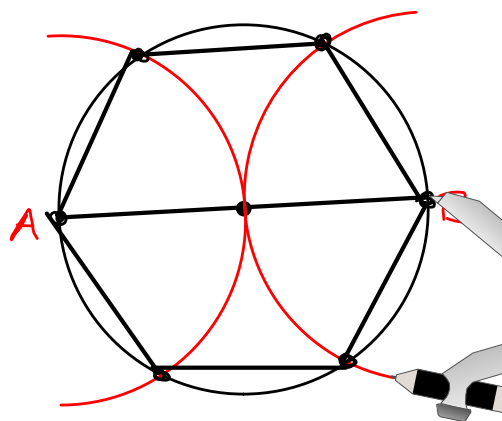
Sep 24-8:02 AM

Constructing an Equilateral Triangle (option 2)

Follow process of constructing a hexagon,
but only connect every OTHER point on
the circumference of the circle

Sep 24-8:24 AM