What am I Constructing????

In order to do this worksheet you should be able to Copy a segment; copy an angle; bisect a segment; bisect an angle; construct perpendicular lines, including the perpendicular bisector of a line segment; and construct a line parallel to a given line through a point not on the line.

Mystery Shape 1 (Group 1)

Mystery shape is:

1. A diameter of the circle is drawn.
2. A perpendicular bisector of the diameter is drawn using the method described in [Perpendicular bisector of a segment](http://www.mathopenref.com/constbisectline.html). This is also a diameter of the circle.
3. There should be four points on the circle that will result in four segments.

Mystery Shape 2 (Group 2)

Mystery shape is:

1. A diameter of the circle is drawn.
2. A perpendicular bisector of the diameter is drawn using the method described in [Perpendicular bisector of a segment](http://www.mathopenref.com/constbisectline.html). This is also a diameter of the circle.
3. There should be four points on the circle that will result in four segments.
4. Bisect the four given angles.

\*\*\*Think of ways to do this construction differently.

Mystery Shape 3 (Group 3)

Mystery shape is:

1. Start with the given circle, center O.
2. Mark a point anywhere on the circle. This will be the first [vertex](http://www.mathopenref.com/vertex.html) of the hexagon
3. Set the compasses on this point and set the width of the compasses to the center of the circle. The compasses are now set to the [radius of the circle](http://www.mathopenref.com/radius.html)**.**
4. Make an arc across the circle. This will be the next vertex of the hexagon.
5. Move the compasses on to the next vertex and draw another arc. This is the third vertex of the hexagon.
6. Continue in this way until you have all six vertices. Draw a line between each successive pairs of vertices, for a total of six lines.

Mystery Shape 4 (Group 4)

Mystery shape is:

1. Start with the line segment AB.
2. Pick a point P
3. Place the point of the compasses on the point A and set its drawing end to point B. Do not change the size that you have established on the compass from now on.
4. With the compasses' point on P, make two arcs.
5. On one of the arcs, mark a point Q that will be a second point. It does not matter which arc you pick, or where on the arc you draw the point.
6. Place the compasses' point on Q and draw an arc that crosses the other arc, creating point R.
7. Using the straightedge, draw three lines linking the points P, Q and R.