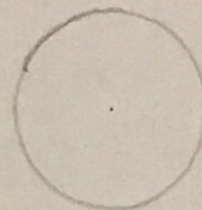
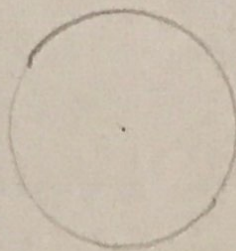
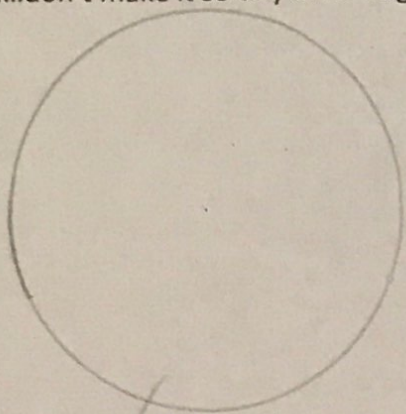
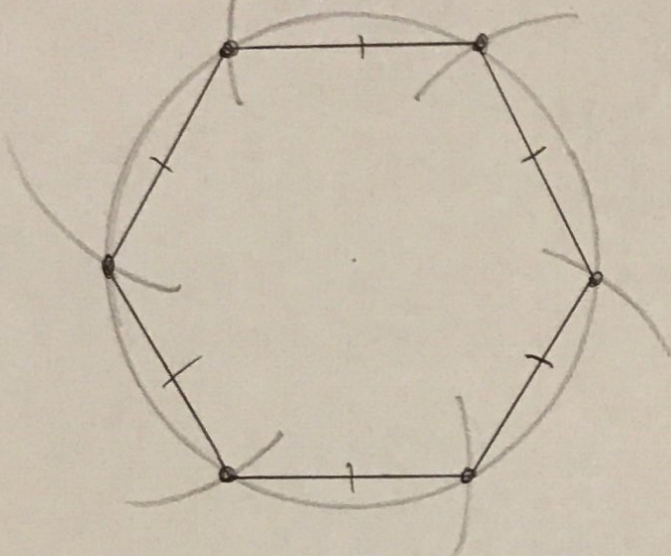


AIM: HOW DO WE CONSTRUCT A HEXAGON AND AN INSCRIBED TRIANGLE?

Do Now: ***VOCAB QUIZ!*** Then, practice drawing circles using your compass. The circle can be any size you wish...don't make it so tiny or so huge!



1. Construct a hexagon.



Steps For Constructing a Hexagon:

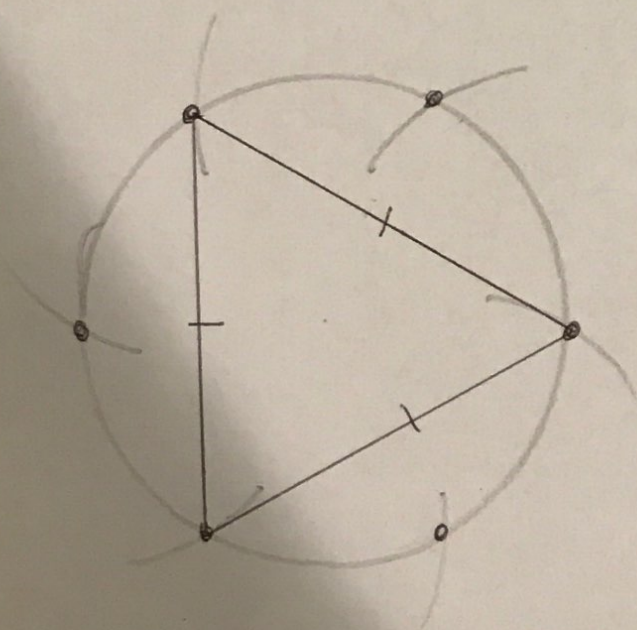
- 1) Draw a circle using your compass of any size.
- 2) Using the length of the radius, position the needle on the circle and make an arc.
- 3) Position the needle on the intersection of the circle and the last arc draw an arc.
- 4) Repeat arcs until you have reached where you started.
- 5) Connect all intersections to create a circle.

*circle created w/ length of radius
each arc = radii = 6 sides

2. Construct an *equilateral* inscribed a circle.

Steps For Constructing an Inscribed Equilateral Triangle:

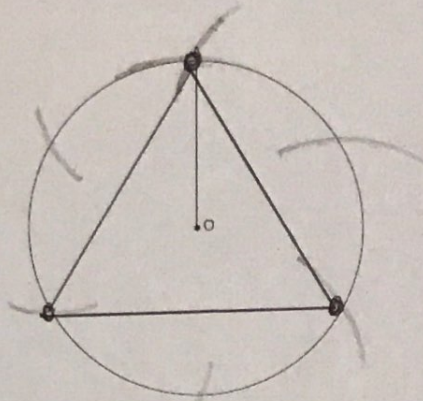
1. Draw a circle any size.
2. Using the length of the radius, position the needle on the circle & make an arc.
3. Position the needle of the intersection of the arc & make a new arc.
4. Repeat step #3 until you have six arcs on your circle.
5. Connect only every other arc to construct your triangle inscribed the circle.



PRACTICE:

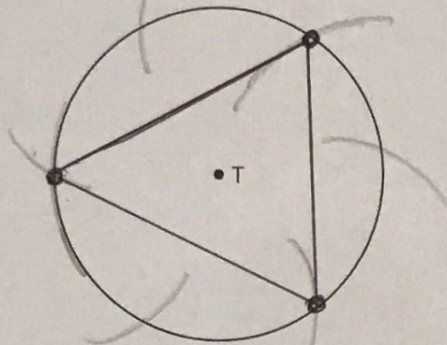
1. Given circle O with radius \overline{OA} , use a compass and straightedge to construct an equilateral triangle inscribed in circle O . [Leave all construction marks.]

* every other!



2. Construct an equilateral triangle inscribed in circle T shown below. [Leave all construction marks.]

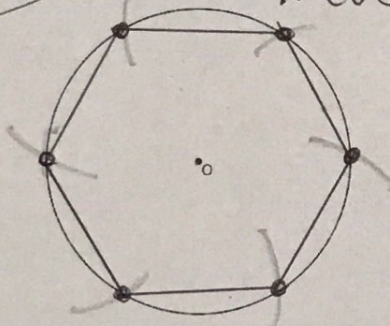
* every other



3. Using a compass and straightedge, construct a regular hexagon inscribed in circle O . [Leave all construction marks.]

* every one

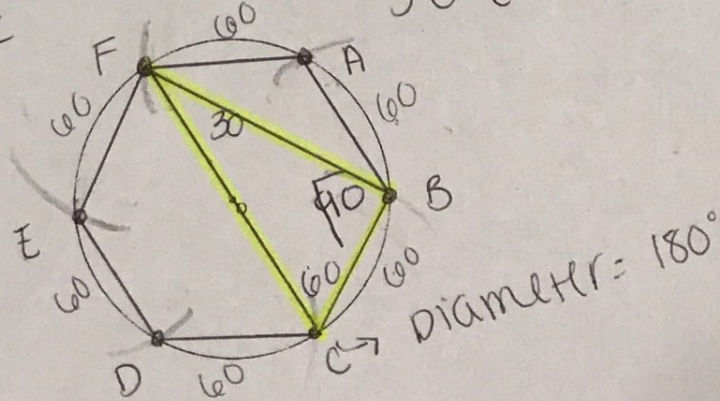
equal sides
equal \angle 's



4. Using a compass and straightedge, construct a regular hexagon inscribed in circle O below. Label it $ABCDEF$. [Leave all construction marks.]

* every one

$$360 \div 6 = 60^\circ \text{ per arc}$$



If chords \overline{FB} and \overline{FC} are drawn, which type of triangle, according to its angles, would $\triangle FBC$ be? Explain your answer.

A right Δ , the \angle 's are $\frac{1}{2}$ the measure of the arc

CONCLUSION!

- An equilateral triangle is made by constructing intersecting circles with equal radii.
- To create an **inscribed equilateral triangle**, use the radius to construct 6 arcs around the circle and connect every other arc.
- To create an **inscribed hexagon**, use the radius to construct 6 arcs around the circle and connect every arc.