Constructing inscribed regular polygons - WORKSHEET #3 – geometrycommoncore

1. Determine whether the relationships is INSCRIBED or CIRCUMSCRIBED.

a) The triangle is _____________.

b) The hexagon is _____________.

c) The circle is ______________

d) The hexagon is _____________.

e) The circle is ______________

f) The triangle is ______________

2. Jeff uses his compass to make a cool design. He just keeps creating congruent circles... over and over...

a) Find a regular hexagon (shade it in)

b) Find a different regular hexagon (shade it in)

c) Find an equilateral triangle (shade it in)

d) Find a different equilateral triangle (shade it in)
3. The inscribed equilateral triangle has a central angle of 120° because \( \frac{360°}{3} = 120° \), an inscribed square has a central angle of 90° because \( \frac{360°}{4} = 90° \). The central angle of a decagon is 36° because \( \frac{360°}{10} = 36° \). Use this information and a compass to create an inscribed decagon.

4. Construct the requested inscribed polygons.

   a) Construct an equilateral triangle inscribed in the provided circle using your compass and straightedge.

   b) Construct a square inscribed in the provided circle using your compass and straightedge.
5. Construct the requested inscribed polygons.

a) Construct a regular hexagon inscribed in the provided circle using your compass and straightedge.  
b) Construct a regular octagon inscribed in the provided circle using your compass and straightedge.
Hint: The central angle is 45°, half of the square’s central angle of 90°.