Geometry Regents Lomac 2015-2016 **Date** 5/6 **due** 5/9 | **Circles: Arcs and Central Angles** **10.1R**

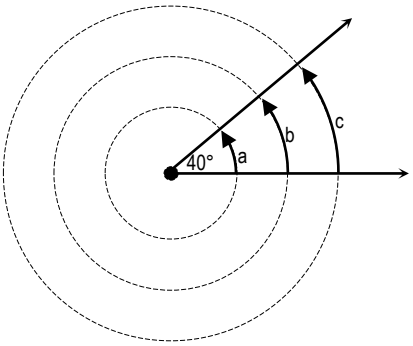
Name _____ **Per**_____

LO: I can find arc and central angle measures and explain the relationship between central angles and their intercepted arcs.

☐ **DO NOW** On the back of this packet

☐ (1) **Circles and arc measure**

An angle measure is determined by the number of degrees of _____ between the sides of the angle. The measure of the angle drawn at right is _____. Arcs a, b, and c are drawn to show the rotation of the angle. The measure of arc a is _____, the measure of arc b is _____, and the measure of arc c is _____ because all three arcs show the rotation of the angle which is _____.

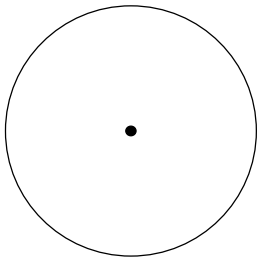


The measure of an **arc** is _____ the measure of the **central angle** that **intercepts** it .

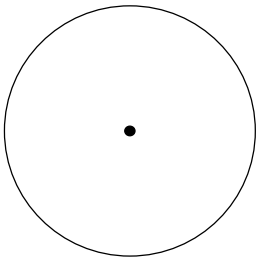
Central Angles on SchoolYourself.org https://schoolyourself.org/learn/geometry/central_angle

☐ (2) You may want to use an internet tool to view the relationship between a **central angle** and the **arc it intercepts** to see that it is what you described in #2 above. Complete a sketch for each example below. Be sure to label the arc measure and the central angle measure.

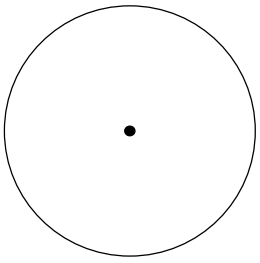
☐ (a) A central angle measures 80°. Therefore, the intercepted arc measures _____



☐ (b) A central angle measures 222°. Therefore, the intercepted arc measures _____



☐ (c) An arc measures 68°. Therefore, the subtended central angle measures _____



☐ (d) Write a sentence that summarizes the relationship between the measure of a **central angle** and the measure of the **arc it intercepts**.

_____

_____

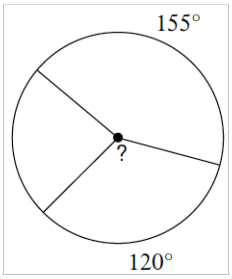
☐ (3) ☐ BEFORE YOU GO ON:

The sum of all non-overlapping central angles in a circle is ____ so the measure of the sum all non-overlapping arcs is ___.Vertical angles are _____. And finally, angles or arcs with the same marks are _____.

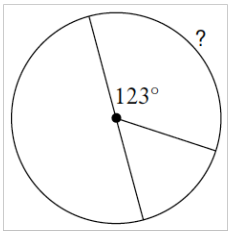
☐ (4) **Using the relationship between central angles and intercepted arcs**

Find the measure of the arc or central angle indicated. Assume that lines which appear to be diameters are actual diameters.

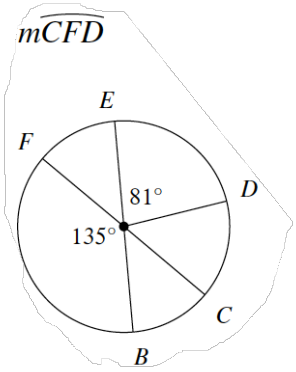
(a)



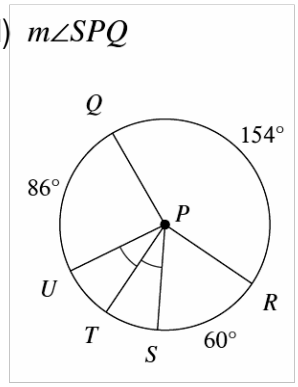
(b)



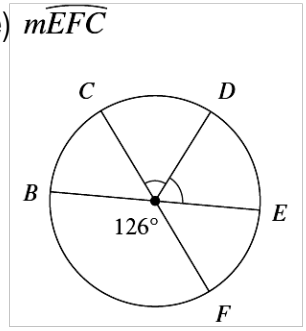
(c) $m\overset{\frown}{CFD}$



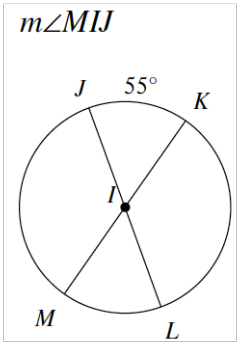
(d) $m\angle SPQ$



(e) $m\overset{\frown}{EFC}$



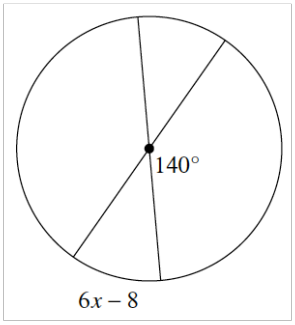
(f) $m\angle MIJ$



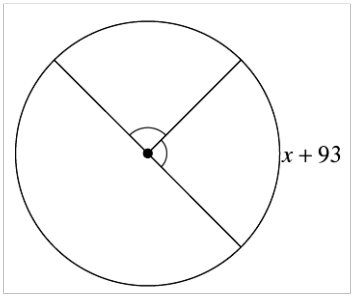
☐ (5) **Using the relationship between central angles and intercepted arcs**

☐ Solve for the indicated measure. Assume that lines which appear to be diameters are actual diameters.

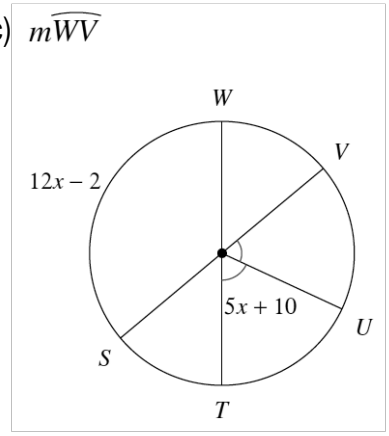
(a) x



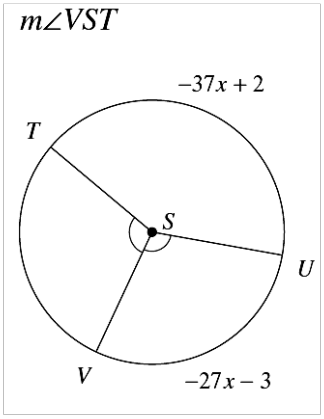
(b) x



(c) $m\widehat{WV}$



(d) $m\angle VST$



☐ (6) calculator **Exit Ticket**

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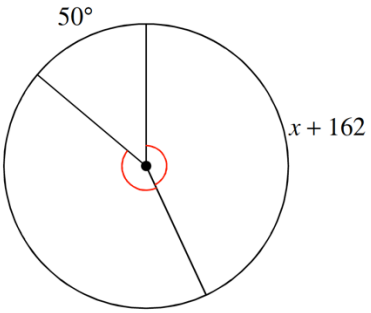
☐ (7) calculator **Homework**

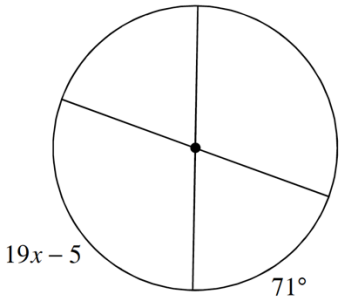
☐ (1)

Solve for x. Assume that lines which appear to be diameters are actual diameters.

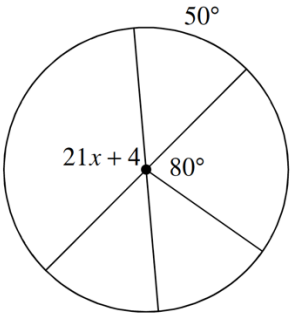
1)



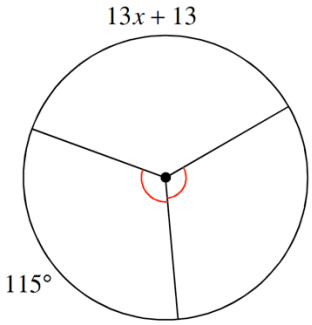
2)



3)

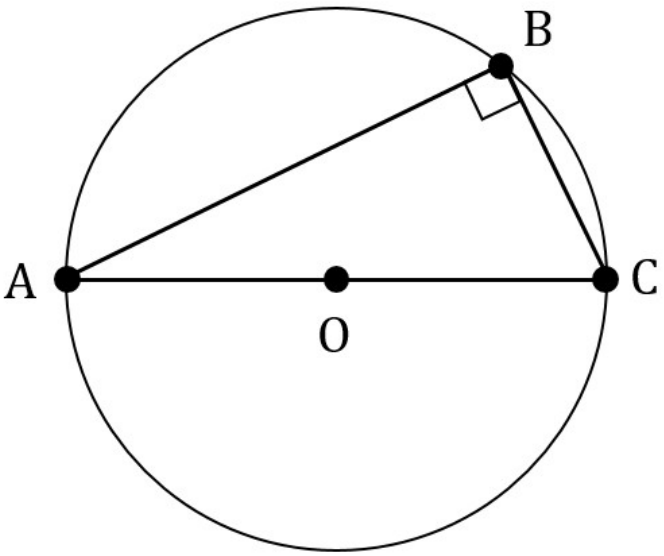


4)



☐ (7) calculator **Homework**

(5) The diameter of circle O is 8 and the measure of angle A is 28°. Find the measures of segment AB and segment BC.



☐ (5)

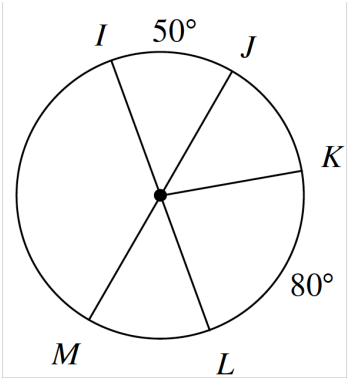
☐ (6)

Exit Ticket **Name**_____ **Date** _____ **Per**_____ **10.1R**

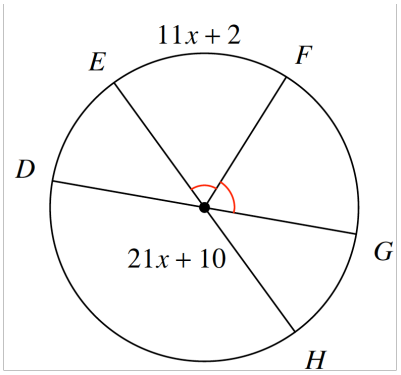
The LO (Learning Outcomes) are written below your name on the front of this packet. Demonstrate your achievement of these outcomes by doing the following:

(1) Find the indicated measure for each diagram.

(a) $m\widehat{MI}$



(b) $m\widehat{DE}$



DO NOW **Name**_____ **Date** _____ **Per**_____ **10.1R**

(1) In the space below, draw a circle, then:

(a) Draw and label center R

(b) Draw and label diameter AB

(c) Draw and label point C anywhere on the circle such that it is distinct from A and B

(d) What shape does it look like is formed when you connect points A, B, and C? _____

(e) Connect point R to point C

(f) Name 3 radii. _____ _____ _____

(2) Both images below are made out of the same 4 shapes.
How can the first one have a gap and the second one not have a gap?