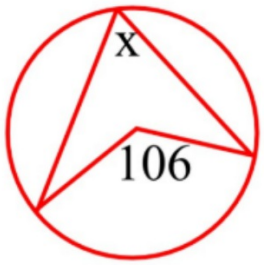
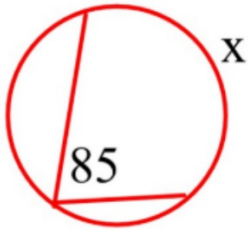
Warm up: Find the measure of x.

1.



2.



3.

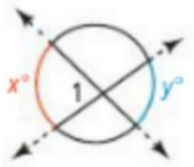
Obj: SWBAT solve problems with angles in circles.

Agenda:
Warm up
Notes
practice
closure

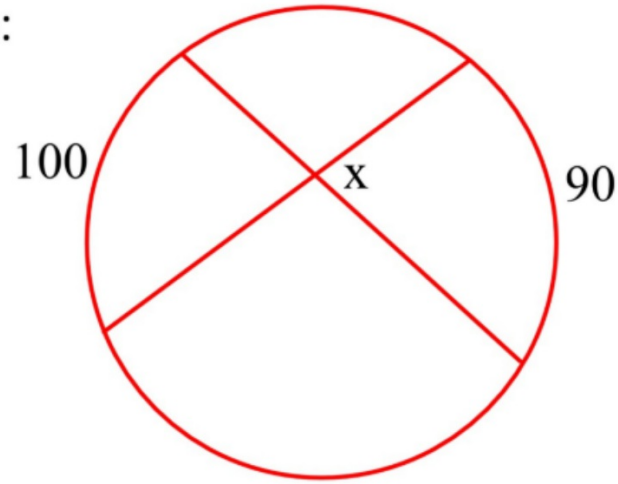
Theorem 12-13

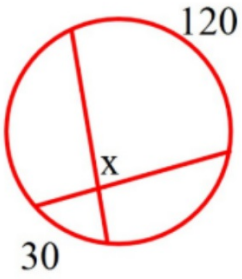
measure of an angle formed by two lines that intersect inside a
le is half the sum of the measures of the intercepted arcs.

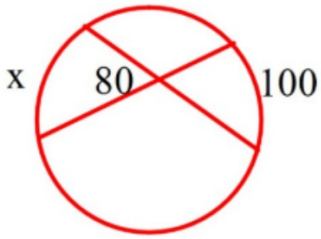
$$m\angle 1 = \frac{1}{2}(x + y)$$

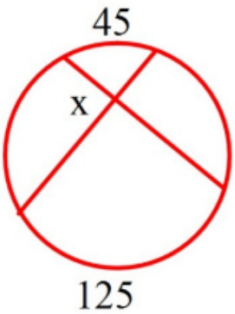


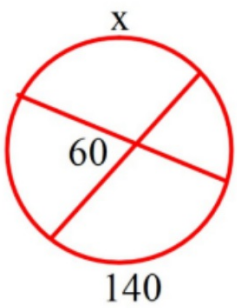
Example:




120
x
30

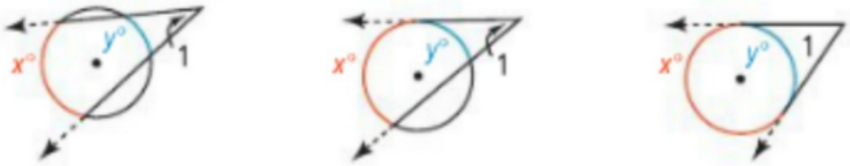

x
80
100


45
x
125


x
60
140

Theorem 12-14

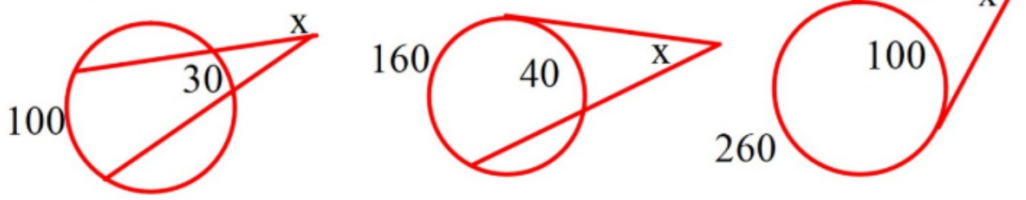
measure of an angle formed by two lines that intersect outside a circle is half the rence of the measures of the intercepted arcs.

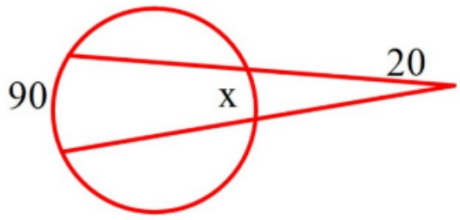


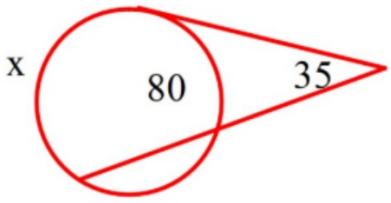
$$m\angle 1 = \frac{1}{2}(x - y)$$

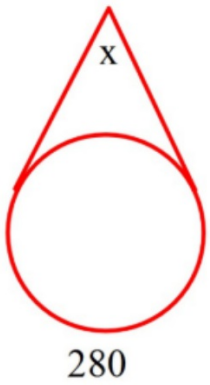
You will prove Theorem 12-14 in Exercises 35 a

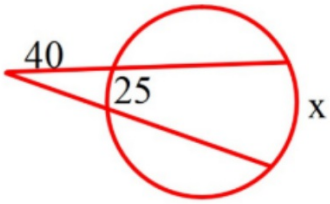
Example:



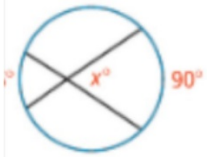

90
x
20


x
80
35

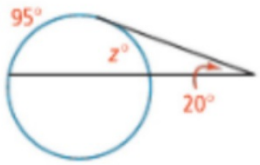

x
280


40
25
x

ɔra What is the value of each variable?

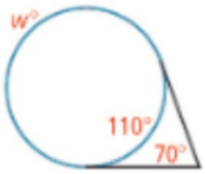


B

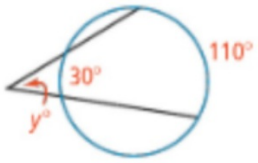


ot It? **1.** What is the value of each variable?

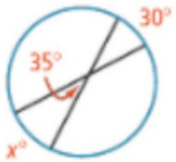
a.



b.



c.



roblem 2 Finding an Arc Measure

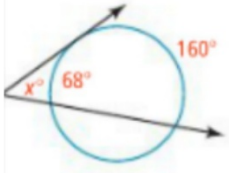
tellite A satellite in a geostationary orbit ove Earth's equator has a viewing angle Earth formed by the two tangents to the uator. The viewing angle is about 17.5°. at is the measure of the arc of Earth t is viewed from the satellite?

It? **2. a.** A departing space probe sends back a picture of Earth as it crosses Earth's equator. The angle formed by the two tangents to the equator is 20°. What is the measure of the arc of the equator that is visible to the space probe?

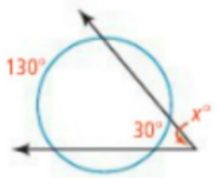
b. Reasoning Is the probe or the geostationary satellite in Problem 2 closer to Earth? Explain.

ɔra **Find the value of each variable.**

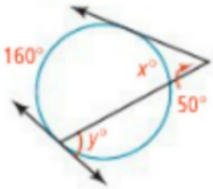
See Problems 1 a

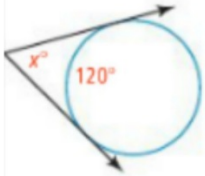


9.

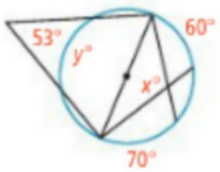


10.

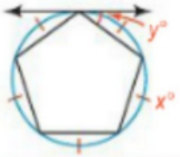




12.



13.



hotography You focus your camera on a circular fountain. our camera is at the vertex of the angle formed by tangents to he fountain. You estimate that this angle is 40°. What is the neasure of the arc of the circular basin of the fountain that vill be in the photograph?

s

Complete worksheet