Questions?

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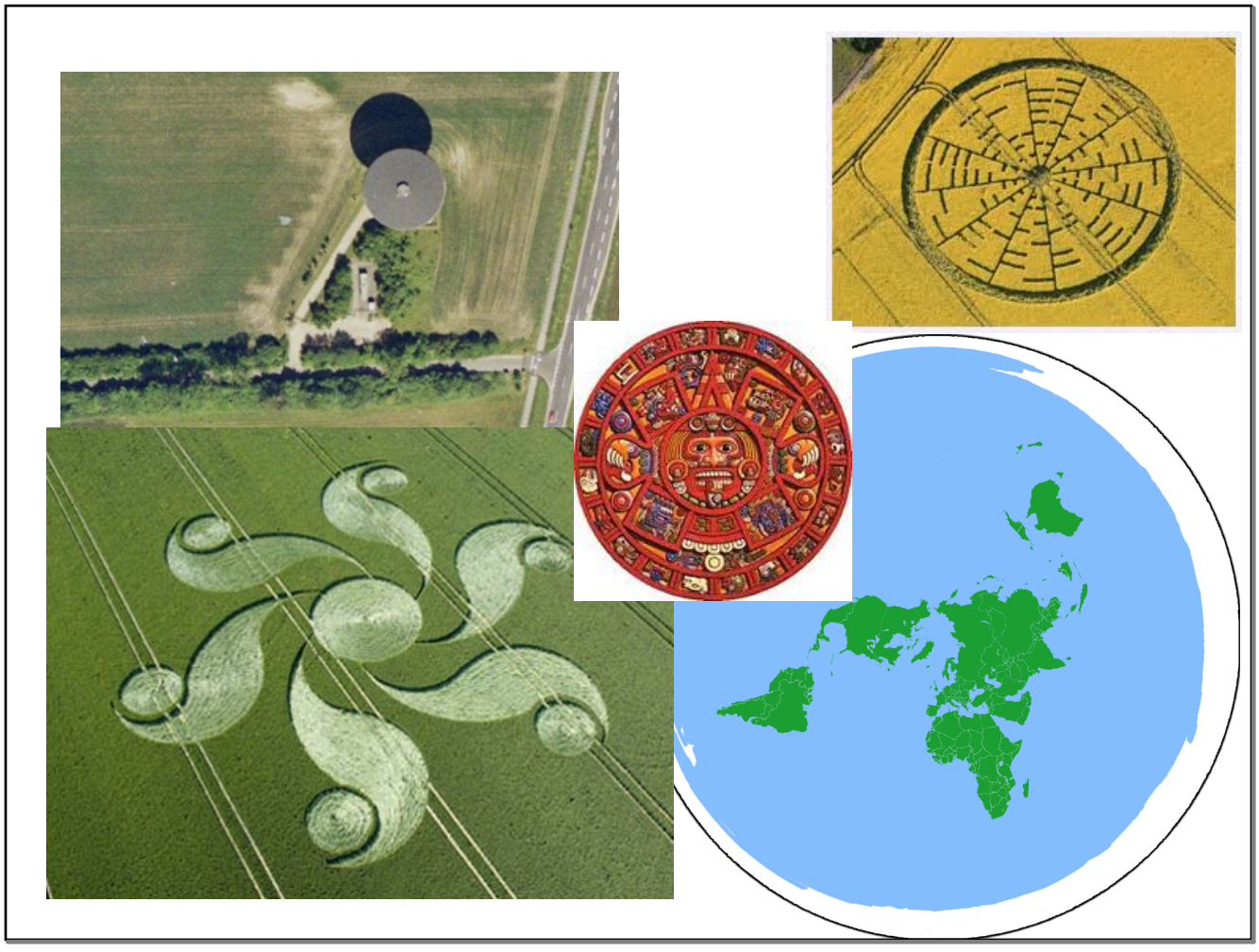

G7 Circles

Chapter 10 in the text book
Classwork:
10.1.1 and 10.1.2
10.1 to 10.5 and 10.12 to 10.15

Homework:
10-6 to 10-10 and 10-17 to 10-22, Omit 10-8

Vocab

Radius, Diameter, Circumference, Area, Chord, Arc(major/minor) Tangent Line, Secant Line, Sector, Segment, Lune, Lens, intercepted, inscribed.

What are they?
How do we measure them?

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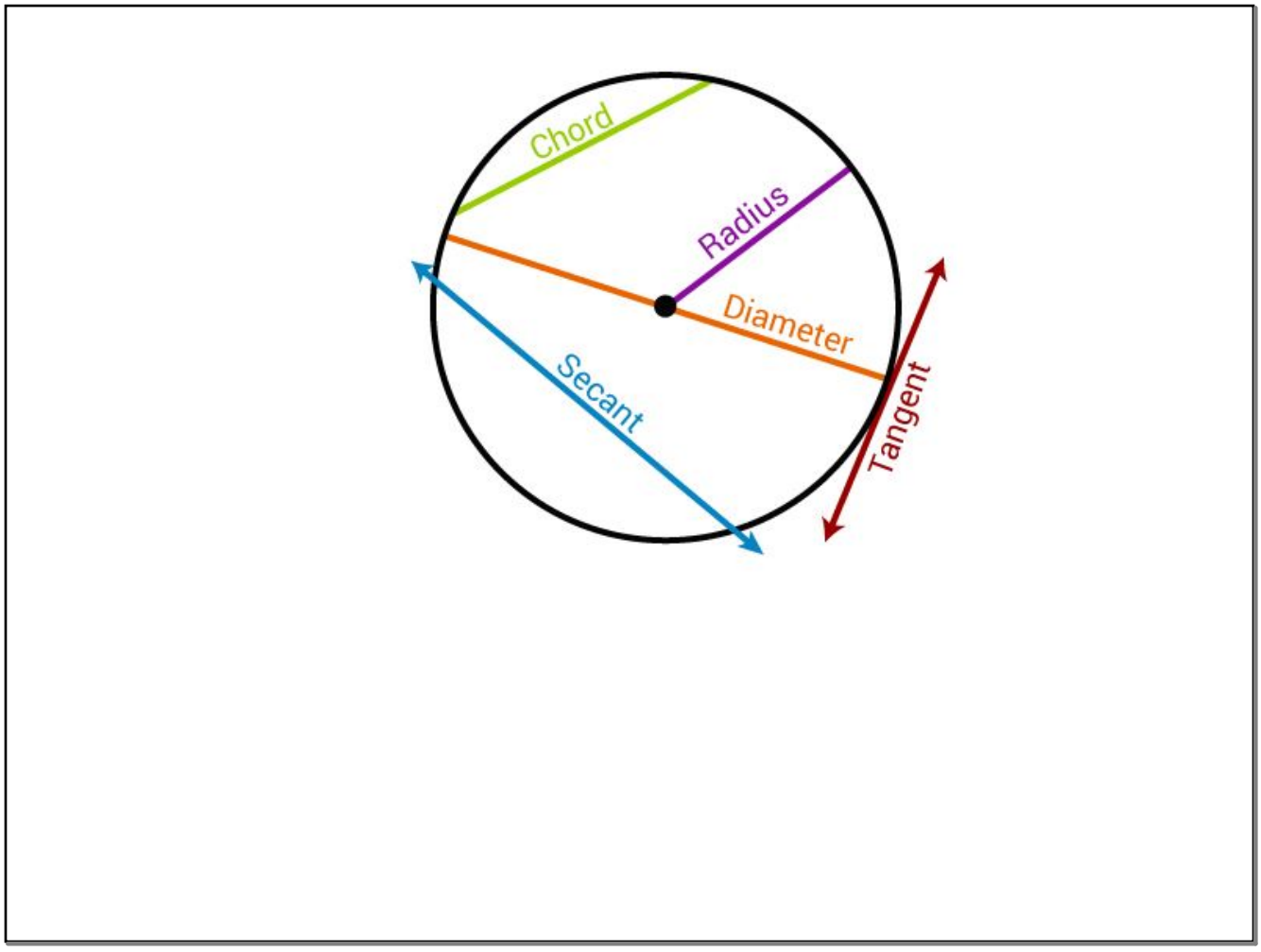

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10.1.1

Objective: At the end of this lesson you should:

1. be able to find the center of a circle using an arc and a perpendicular bisector,

2. be able to find the center of a circle using a chord and a perpendicular bisector,

3. know how to find/label the minor and major arcs of a circle.

Homework:
10-6 to 10-10 (omit 10-8) and 10-17 to 10-22

Archeologists often need to calculate the diameter of a circle given a fragment of one.

Do you think you can find the size of the entire dish given only a sherd?

14th Century Chinese

U.S. Civil War

10-1

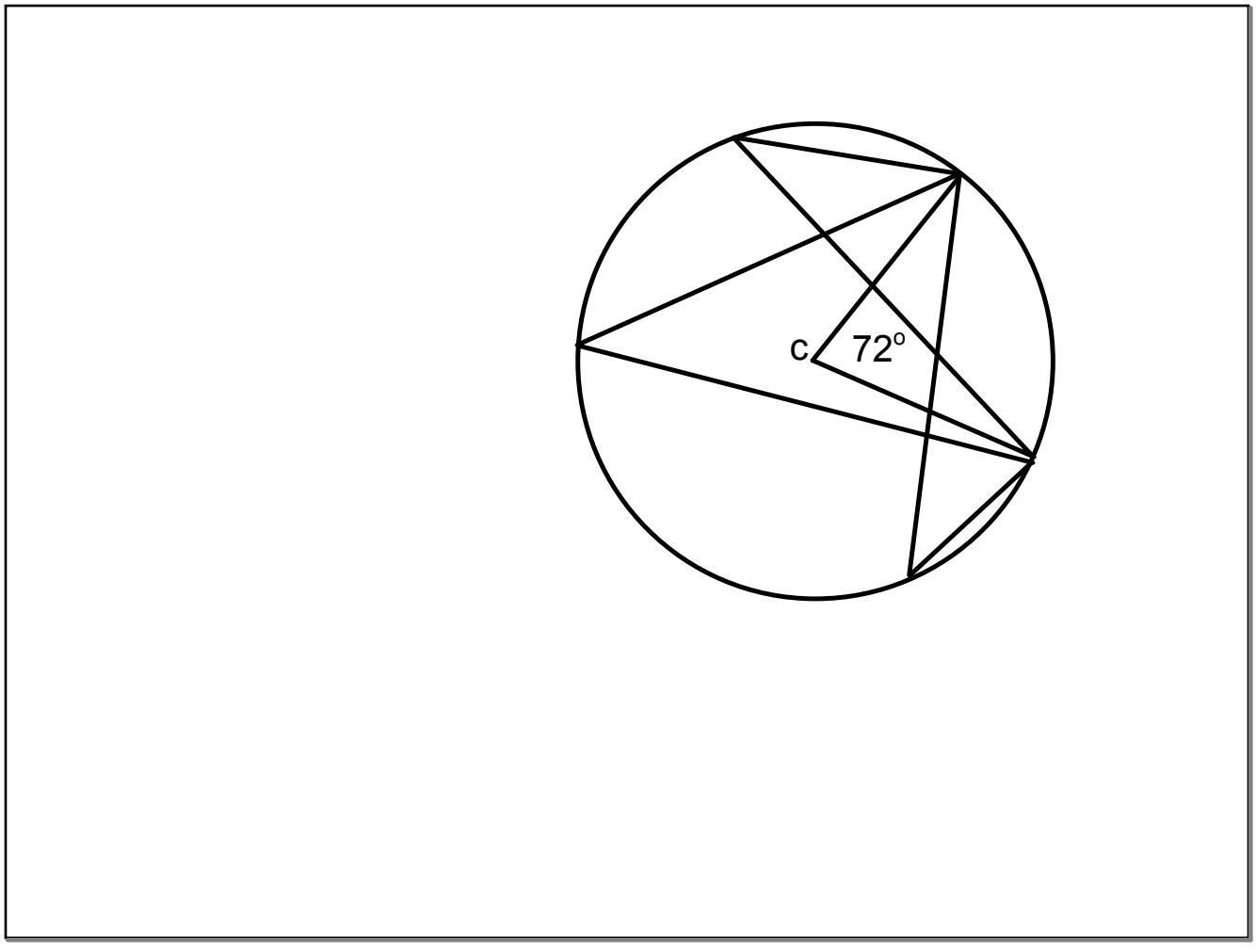
- Find the center of the circle of the "sherd" you are given. Mark it clearly!
- Find the area of your "pottery plate"?

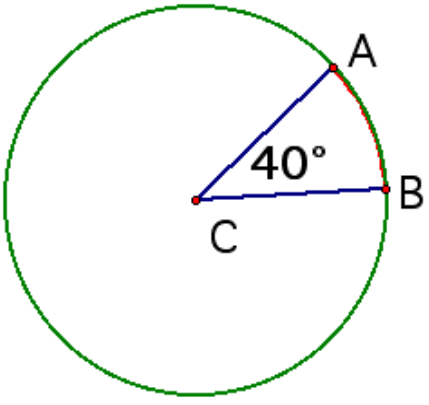
10.1.2

Objectives:

Find the relationship between a central angle and an intercepted arc.

Find the relationship between an inscribed angle and an intercepted arc.

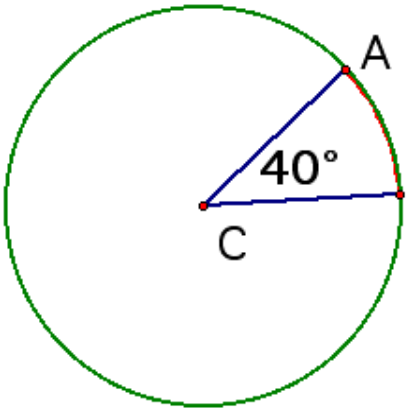

c
72°



What fraction of the whole circumference is $\overset{\frown}{AB}$?

If $m\overset{\frown}{AB} = 120$in, what is the circumference?

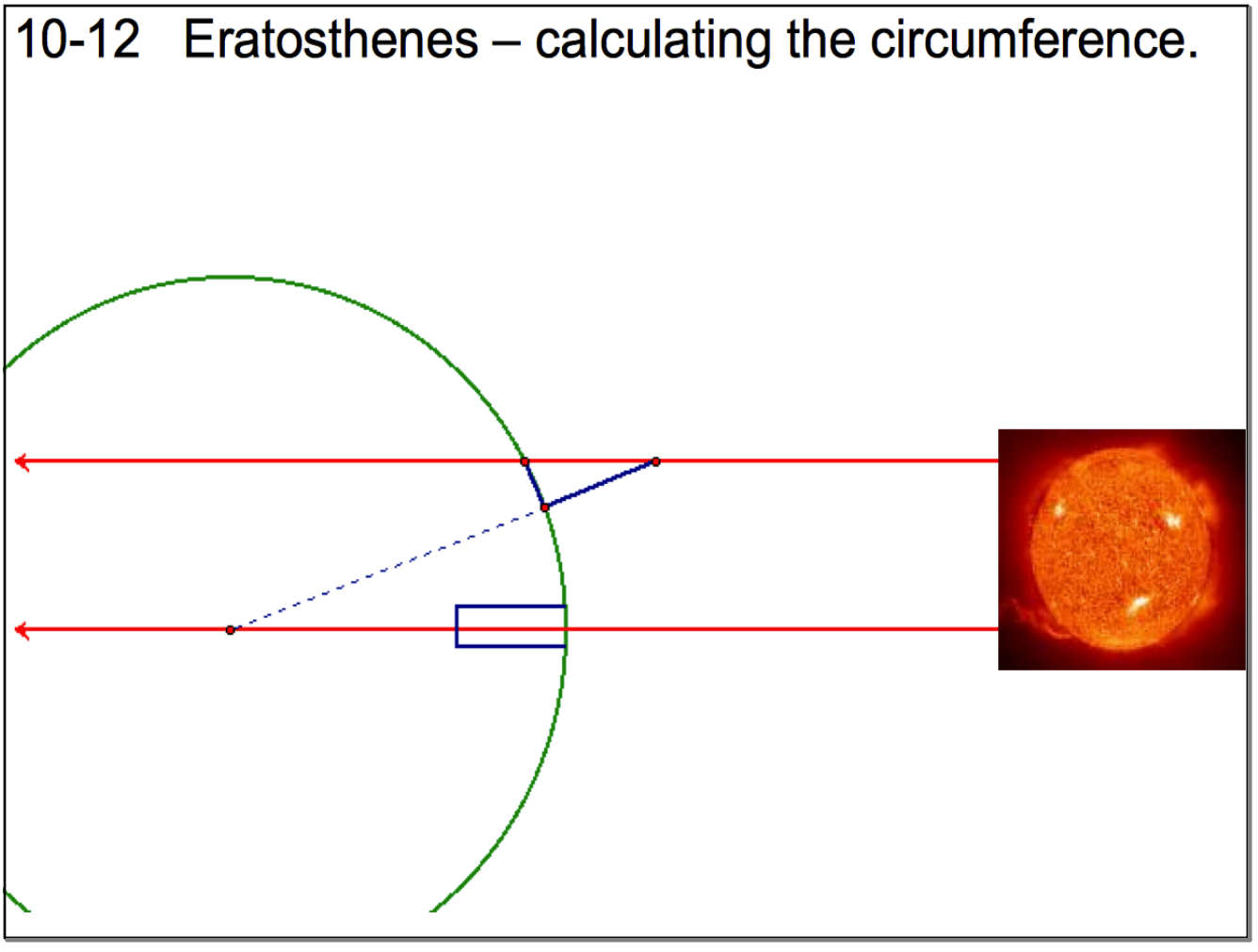
What is the radius?



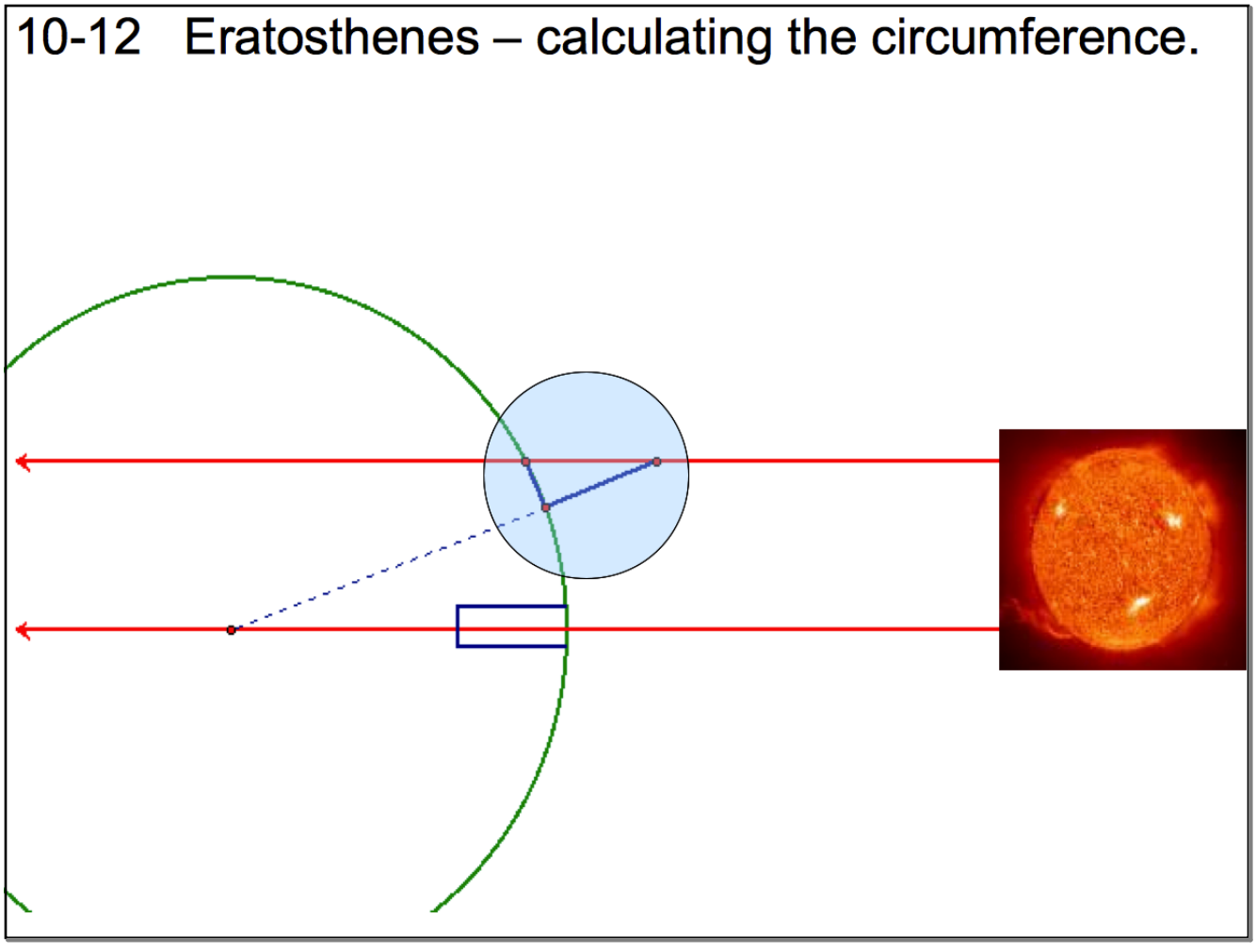
Another way to find circumference is with ratios

$$\frac{360}{40} = \frac{C}{120} \qquad C = \frac{120 * 360}{40} \qquad C = 1080$$

10-12 Eratosthenes – calculating the circumference.



10-12 Eratosthenes – calculating the circumference.



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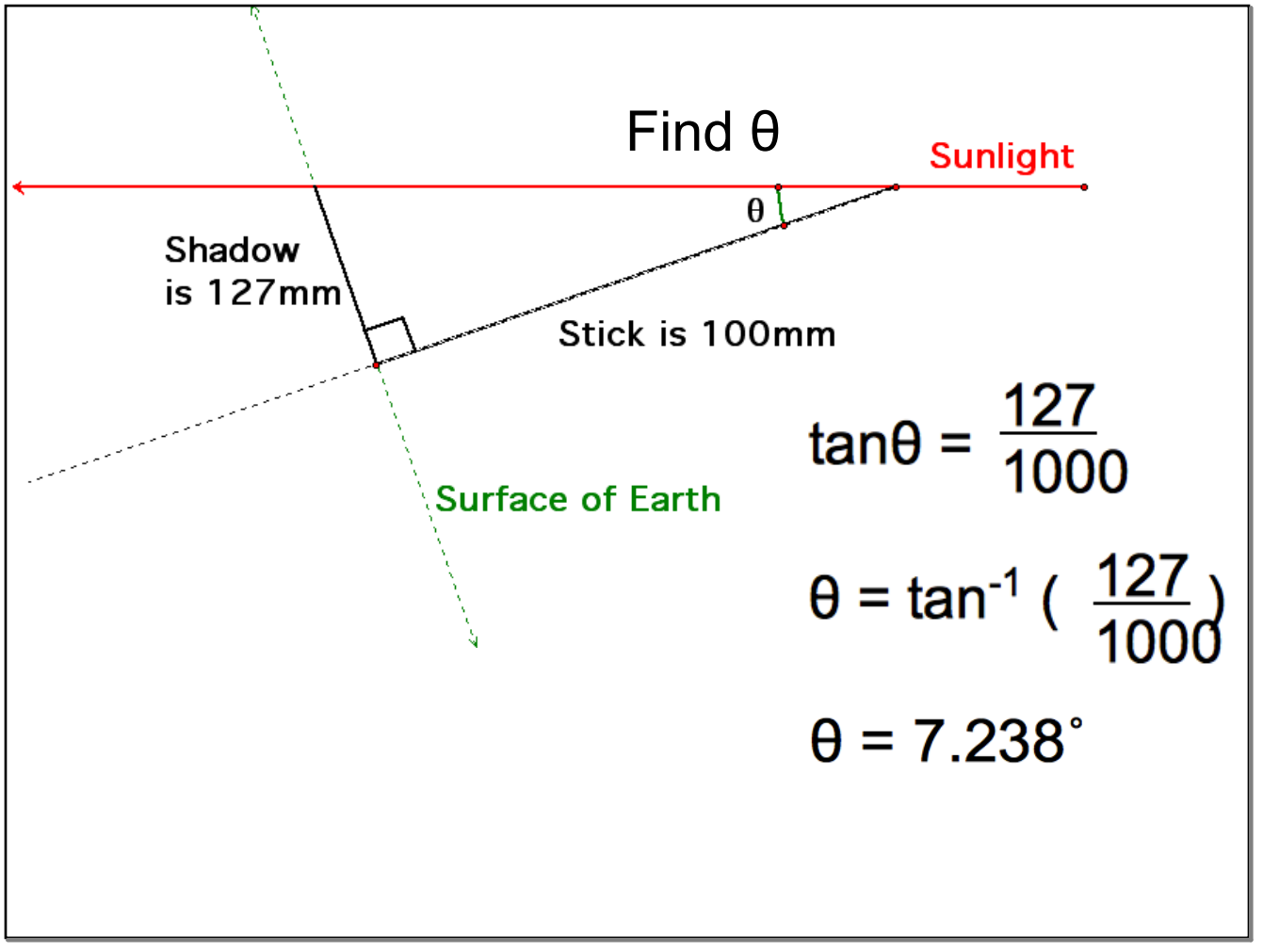
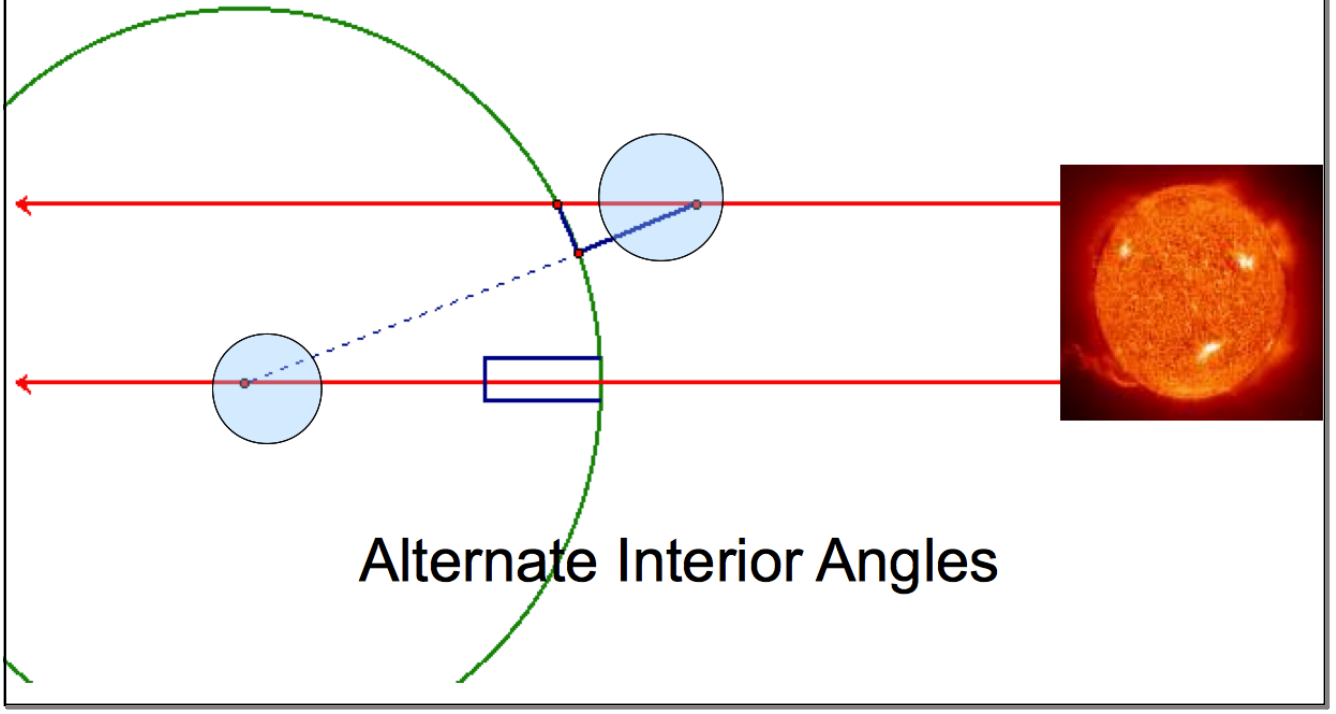


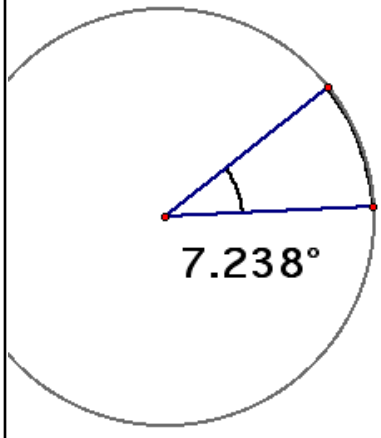
10-12 Eratosthenes

Find the central angle



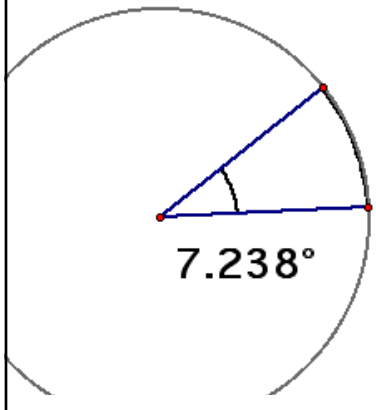
Alternate Interior Angles

If the central angle is 7.238°, what fraction of the circumference is the arc?



$$7.238/360 \approx 1/50$$

If the central angle is 7.238°, the fraction of the circumference is 1/50



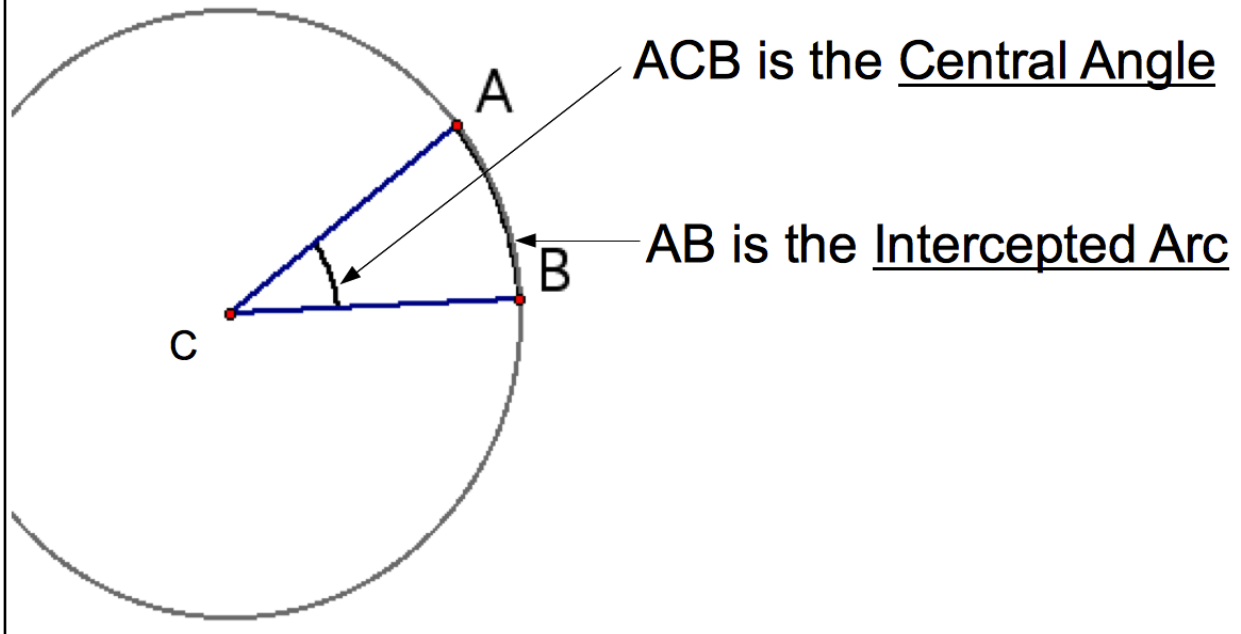
If the distance between the well and the stick is 500 miles, what is the circumference of the Earth?

50 * 500 = 25,000 miles

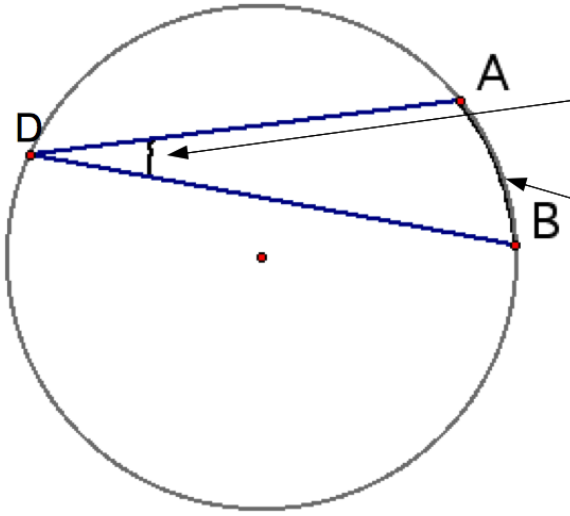
Using ratios:

$$\frac{360}{7.238} = \frac{C}{500} \qquad C = \frac{360 * 500}{7.238} \qquad C = 24{,}868$$

Clearly there is a relationship between central angle and arc measure and arc length.



Is there a relationship between an inscribed angle and arc measure and arc length?



ADB is the Inscribed Angle

AB is the Intercepted Arc

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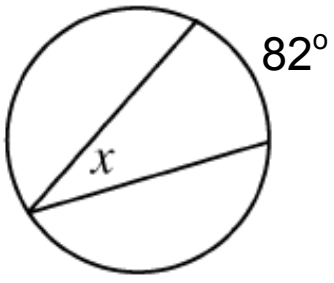
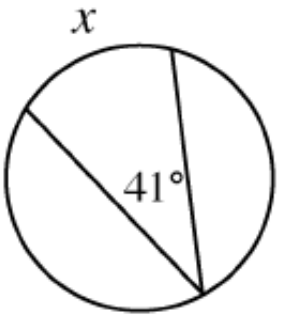
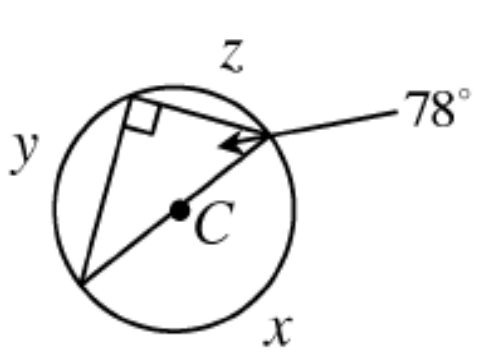
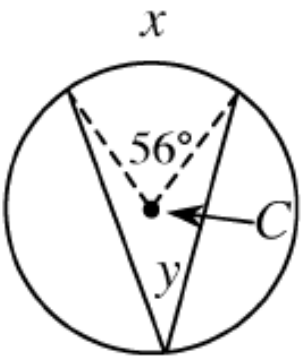
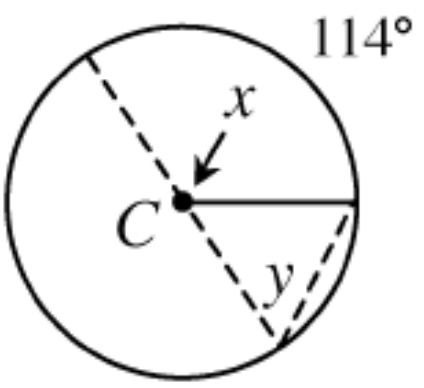
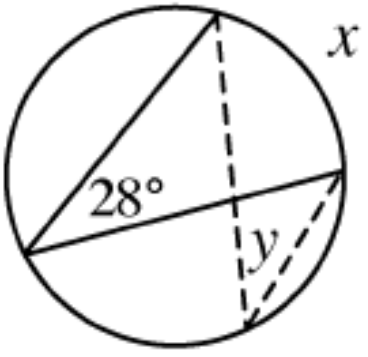

82°
x


x
41°


z
78°
y
C
x


x
56°
C
y


114°
x
C
y


x
28°
y

More?

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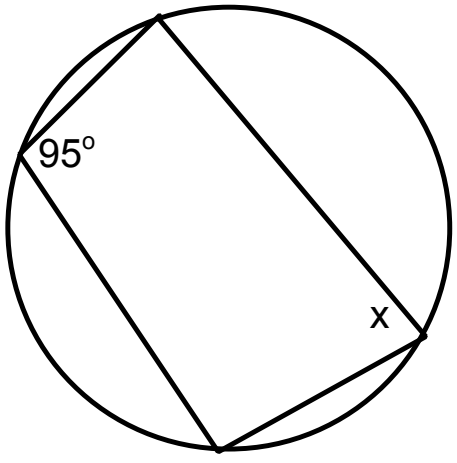

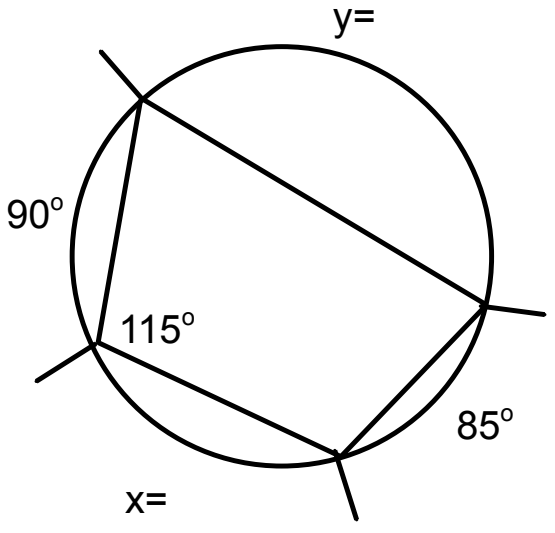

Homework:
10-6 to 10-10 and 10-17 to 10-22, Omit 10-8

Fin

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