# **Honors Geometry** Geometer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

POW#6--Five Circles Period\_\_\_\_\_\_\_\_\_\_ Due **2-17**

The five circles below represent gears that are interlocking. Gear G has a radius is 4 cm. Gear E has a diameter of 12 cm. Gear A has a radius of 8 cm, gear R has a radius of 1 cm, and gear S has a diameter of 24 cm. (hint: It is probably easiest to calculate all lengths in exact terms.)

**Gear G spins 5 times counter-clockwise**. Given the point X on gear S, locate its new position after turning.

1. Determine the arc measure from its original position on gear S to its new position.
2. Determine the arc length from its original position on the gear to its new position.
3. Draw the new position of X (label it X’) on the diagram.

X

S

R

A

E

G