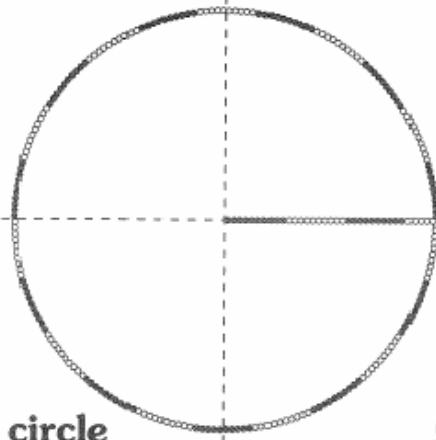
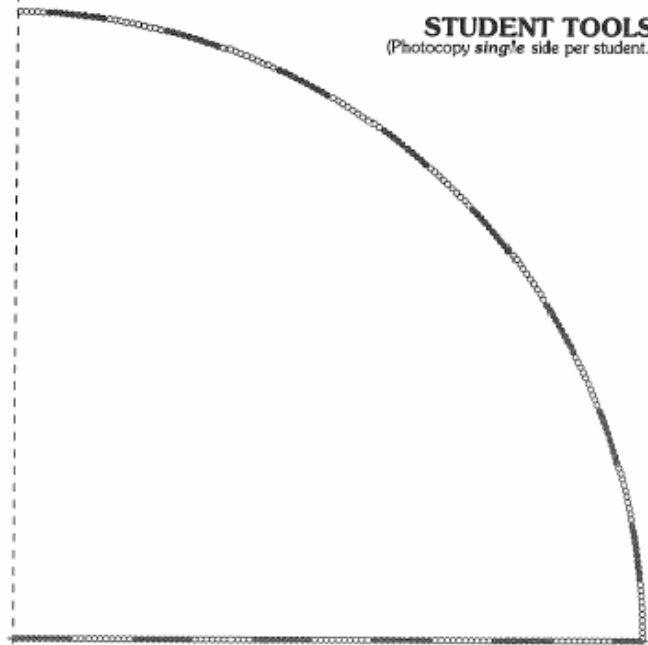


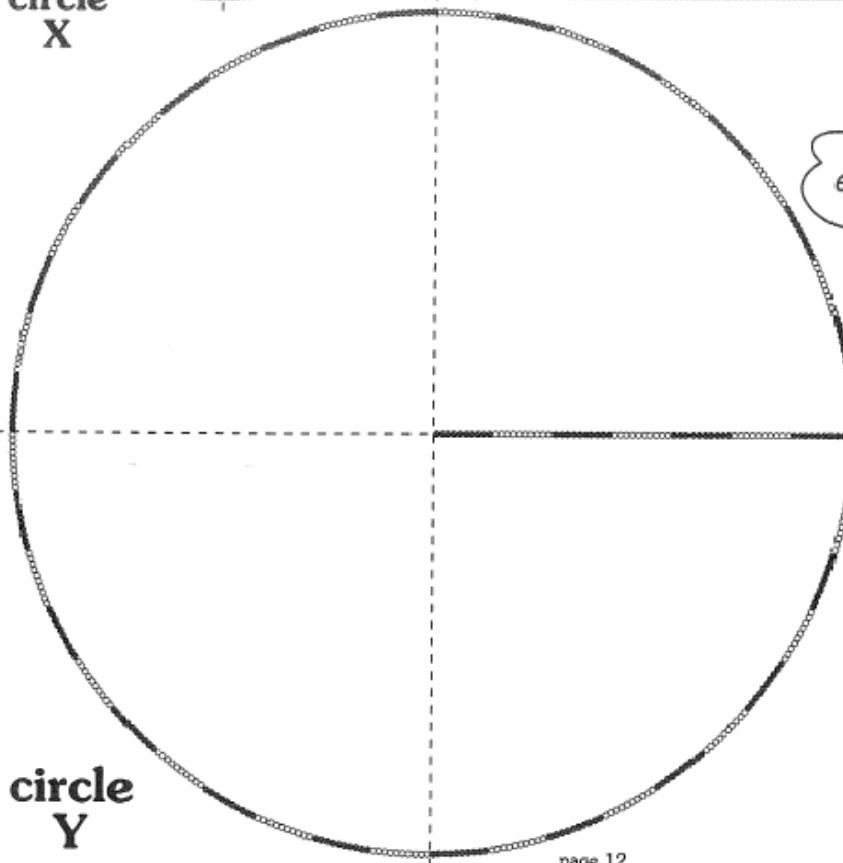
Millimeter Beads



circle
X

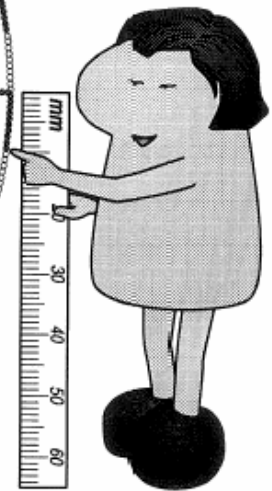


circle Z



circle
Y

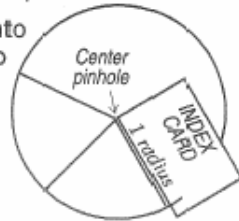
The diameter of
each tiny *bead* equals
one millimeter.



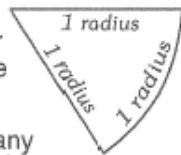
B1: So what's a radian?

1. Balance a paper plate upside down on a pin to find its center. Punch the pin through to mark this point.

2. Cut this plate into "radius wedges," so each slice has three **equal** sides (two straight plus one curved).



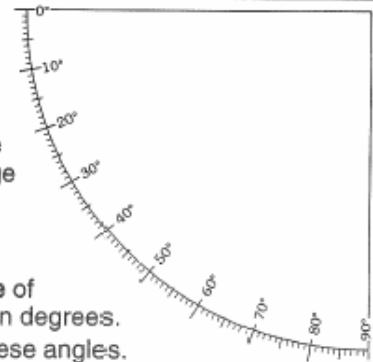
a. Label one of your wedges like this.



b. How many radius wedges did you get? What fraction of a full wedge was left over?

c. How many radius wedges (how many radii), should fit around the circle? Why didn't you get that exact number?

3. Use this protractor to estimate the size of each full wedge and the skinny remainder:



a. Label the **central angle** of each wedge in degrees.

b. Add up these angles. Do they total what you think they should? Explain.

4. Each radius wedge defines a central angle of one **radian**.

a. So what's a radian? Write a definition in your own words.

b. How many radians are in 360° ? 180° ?

c. How many degrees are in 1 radian?

concept: B1 B2 B3 B4 B5 B6 B7

materials: Paper plate, pin, scissors, index card, calculator.

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