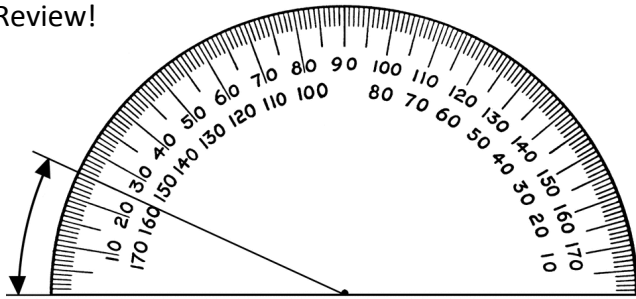


Making Sense of Radians

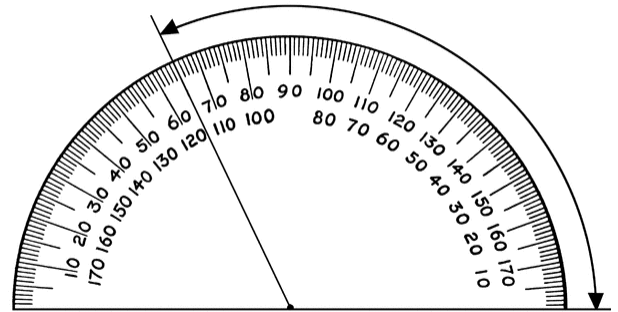
Jennifer Silverman www.proradian.net

A New Protractor and a New Measure!

1. Review!



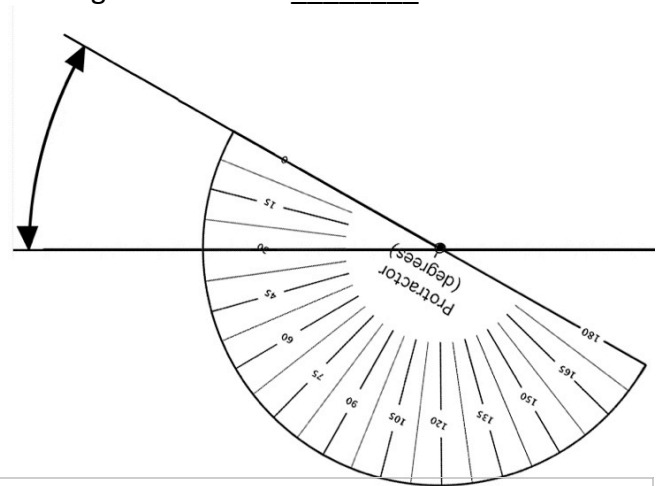
Angle measure of _____°



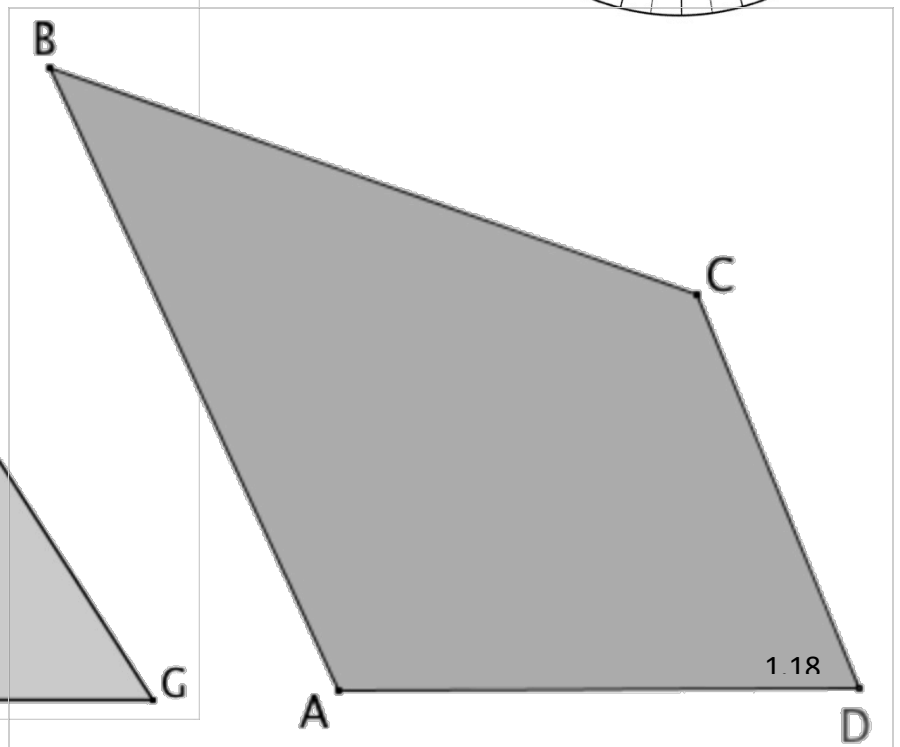
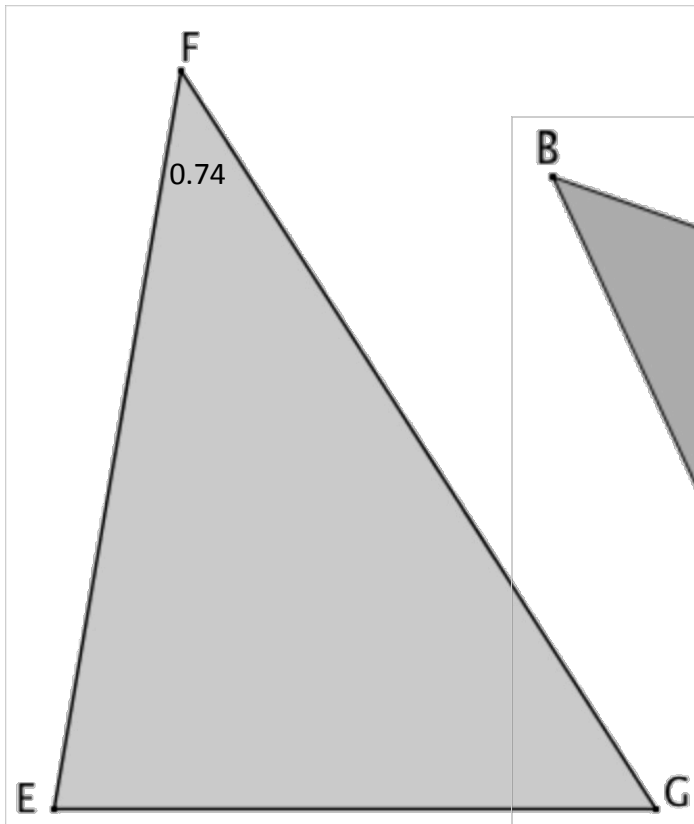
Angle measure of _____°

2. What if it only had one scale?

Angle measure of _____°



3. Measure the missing angles with **ProRadian1**.

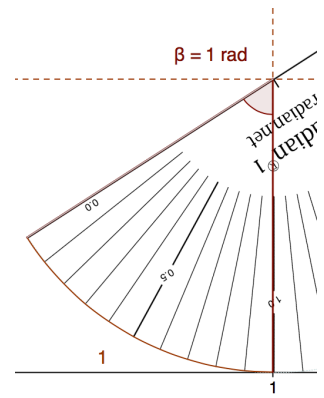


Sum of angle measures = _____

Sum of angle measures = _____

4. Explore the applet at <http://bit.ly/18KYWXT>.

Each time the protractor rolled a distance equal to its radius, it turned 1 **radian**. This may be a new unit of angle measure for us, but it is the one used most by mathematicians.



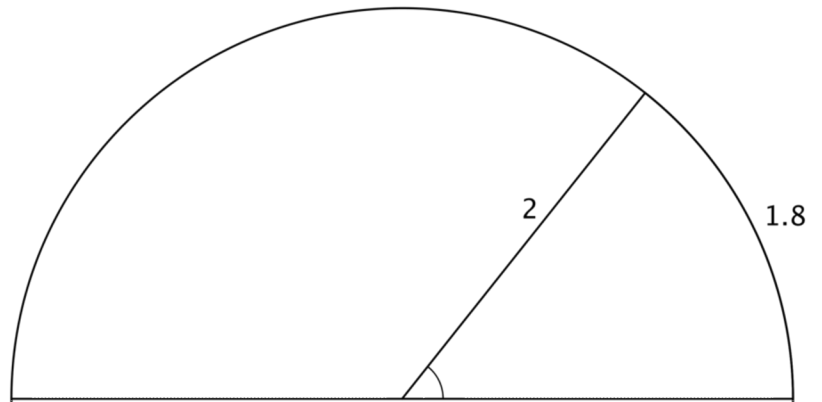
5. Use ProRadian1 to measure the angles below.

Write 3 equations that connect the values of the arc length, the radius, and the angle for each.

a. $2 = 1.8 / \underline{\hspace{2cm}}$

$1.8 = 2 (\underline{\hspace{2cm}})$

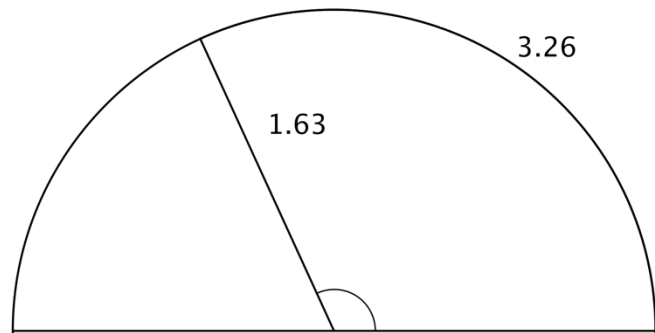
$\underline{\hspace{2cm}} = 1.8 / 2$



b. $1.63 =$

$3.26 =$

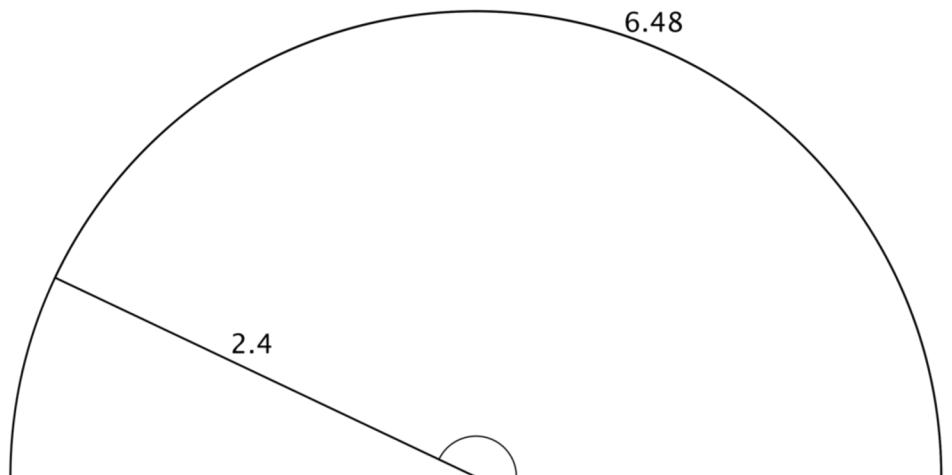
$\underline{\hspace{2cm}} =$



c. $2.4 =$

$6.48 =$

$\underline{\hspace{2cm}} =$

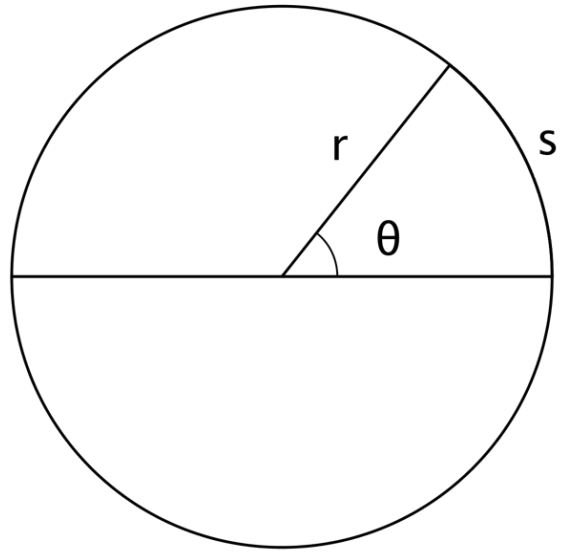


6. Write 3 **general** rules that connect the arc length (s), the radius (r), and the angle (θ).

$\theta =$ _____

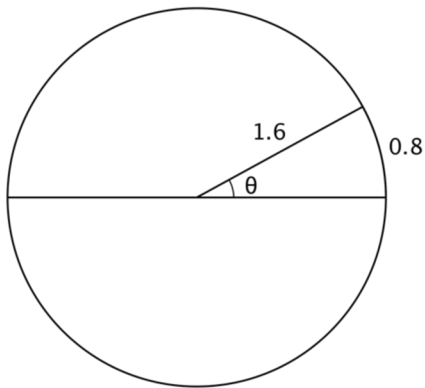
$s =$ _____

$r =$ _____

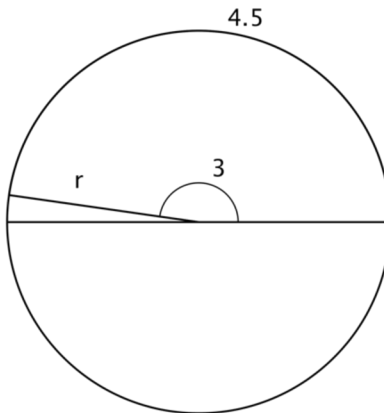


7. Use your rules to predict the missing values.

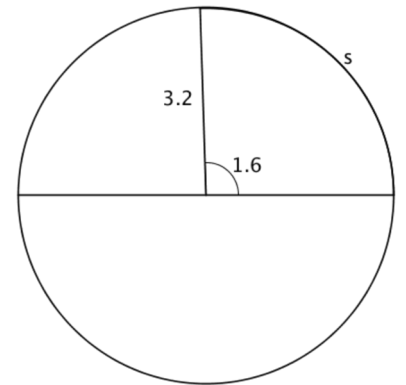
a. $\theta =$ _____



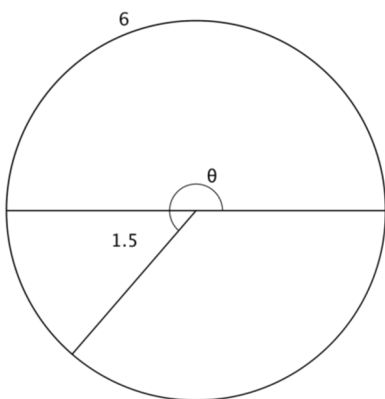
b. $r =$ _____



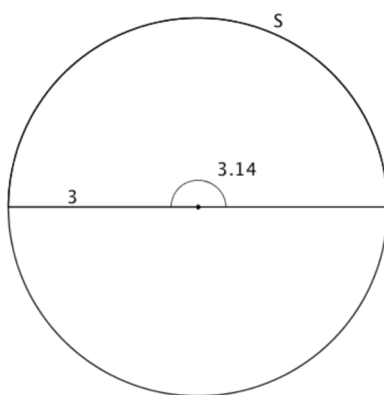
c. $s =$ _____



d. $\theta =$ _____



e. $s =$ _____



f. $r =$ _____

