



# π IN THE SKY<sup>10</sup>

## ANSWER KEY

### ECLIPSING ENIGMA

What percentage of the Sun's disk area will be obscured by the Moon?

- Use similar triangles to find the radius of the Sun's disk area that is obscured by the Moon.

$$\frac{1,737 \text{ km}}{388,901 \text{ km}} = \frac{x}{148,523,036 \text{ km}} \Rightarrow x \approx 663,400 \text{ km}$$

- Calculate the ratio of the obscured area to the Sun's total disk area using the formula for area of a circle.

$$\frac{A_{\text{Moon}}}{A_{\text{Sun}}} = \frac{\pi r^2}{\pi r^2} \approx \frac{\pi(663,400 \text{ km})^2}{\pi(695,700 \text{ km})^2} \approx 0.91 = \text{91\%}$$

Will the eclipse be an annular eclipse or total eclipse?

It will be an annular eclipse.

