

## Answer on Question #83355 – Math – Trigonometry

### Question

What is the measure of the central angle of a circle, in degrees, with radius 5 m that intercepts a 2 m arc?

- a) 0.4
- b) 22.9
- c) 72
- d) 143.2

### Solution

The radian measure  $\theta$  of the central angle is the ratio of the arc length  $s$  to the radius  $r$ .

$$\theta = \frac{s}{r}$$

Substitute

$$\theta = \frac{2}{5} \text{ rad}$$

Proportion

$180^\circ$  corresponds to  $\pi$  rad

$x^\circ$  corresponds to  $\frac{2}{5}$  rad

Then

$$\frac{180^\circ}{x^\circ} = \frac{\pi \text{ rad}}{\frac{2}{5} \text{ rad}} \Rightarrow x = \left(\frac{2}{5\pi}\right) 180^\circ \approx 22.9^\circ$$

**Answer:** b)  $22.9^\circ$ .