

Name: _____ Date: _____

Circles: Arc Length & Area of a Sector

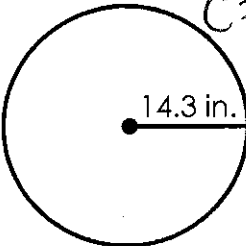
Circumference of a Circle

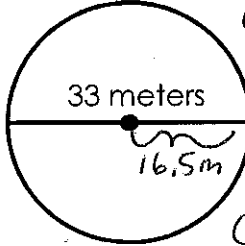
$d = \text{diameter}$ $r = \text{radius}$

$C = \pi d$ or $C = 2\pi r$

exact has π in it
 *rounded answers do not have π *

Find the circumference of each circle:

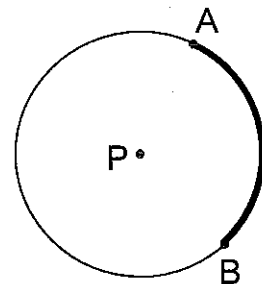
1.  $C = 2\pi r$
 $C = 2\pi(14.3)$
 $C = 28.6\pi \text{ in (exact)}$
 $= 89.8 \text{ (rounded)}$
in

2.  $C = 2\pi r$
 $C = 2\pi(16.5)$
 $C = 33\pi \text{ m}$
 or
 $C = 103.62 \text{ m}$

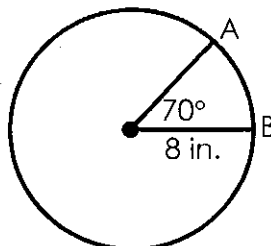
Arc Length of a Circle

$\text{Arc Length} = \frac{2\pi r \theta}{360}$

$\theta = \text{angle}$
 $r = \text{radius}$

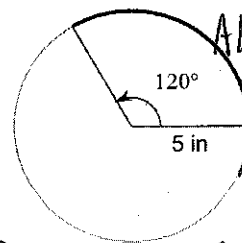


3. Find the arc length of \widehat{AB} :



$\text{Arc Length} = \frac{2\pi r \theta}{360} = \frac{2\pi(8)(70)}{360} = \frac{280\pi}{9} \text{ (exact)}$
 $= 9.77 \text{ in rounded}$

4. Find the radius of $\odot P$:



$AL = \frac{2\pi r \theta}{360}$
 $AL = \frac{2\pi(5)(120)}{360}$
 $AL = \frac{10}{3}\pi \text{ in (exact)}$
 $AL = 10.47 \text{ in (rounded)}$