7.3 Circumference and Arc Length

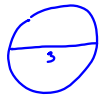
$\frac{C}{d} = \pi$

π is a nonterminating nonrepeating Decimal

$\pi = 3.14, \frac{22}{7}$

Circumference
distance around a circle

$C = \pi d$ $C = 3.14(3)$



$C = 9.42$

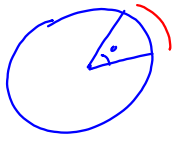
What if we are given radius instead of diameter

$d = 2r$

$C = \pi d$

$C = 2\pi r$

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



Need more information
- Central Angle

An angle whose vertex is at the center

$0 < A < 360$

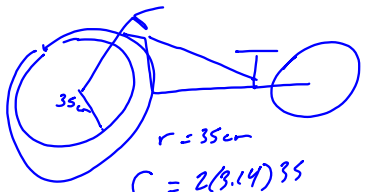
Arc length is proportional to the circumference

$\frac{\text{Arc length}}{C = d\pi} = \frac{\text{Central } \angle}{360°}$

$\frac{A}{5(3.14)^2} = \frac{90}{360}$

$31.4\left(\frac{A}{31.4} = \frac{1}{4}\right)$

$A = 7.85$



r = 35cm

$C = 2(3.14)35$

$C = 219.8\text{ cm}$

$= 4398.00$

4396 m 4.396 km

Use 3.14 for π