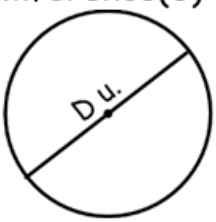
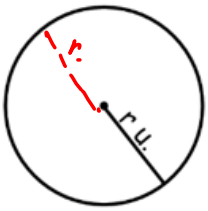
G7B-1 Notes – Circumference and arc length

Circumference(C) = πD C = $2\pi r$

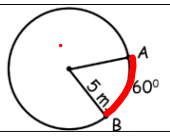




Given the circumference (C): D = $\frac{C}{\pi}$ r = $\frac{C}{2\pi}$

Arc length: A piece of the circumference.

Measured in (m., in., ft, ...) not degrees.

Example: Find the arc length of $\overset{\frown}{AB}$. 	
Step 1: Find the circumference.	C = 2π(5) =10π m.
Step 2: Find the fraction of the circle made up of the arc. 90^0 = $\frac{1}{4}$ 180^0 = $\frac{1}{2}$ 120^0 = $\frac{1}{3}$ 45^0 = $\frac{1}{8}$	$\frac{60^\circ}{360^\circ} = \frac{1}{6}$
Step 3: Multiply the circumference by the fraction.	Arc length = $\frac{1}{6}(10\pi)$ $= \frac{10\pi}{6}$ $= \frac{5\pi}{3}$ m.

$= \frac{1}{2} \cdot 5 \cdot \pi$