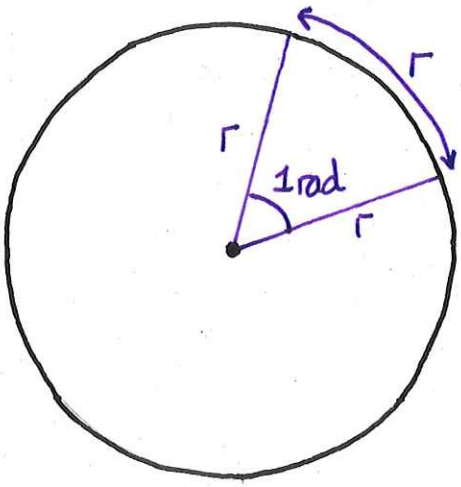
YEAR 2 PURE

RADIANS

Chapter 5



$360° = 2\pi$

$180° = \pi$

$90° = \pi/2$

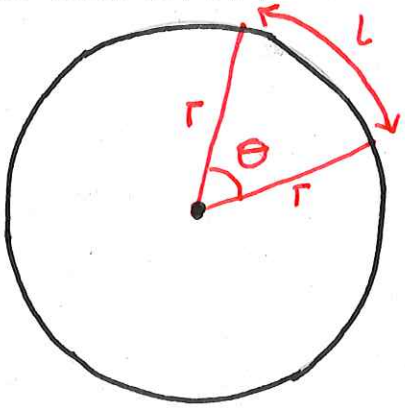
$270° = 3\pi/2$

$\div 180 \times \pi$

Degrees = Radians

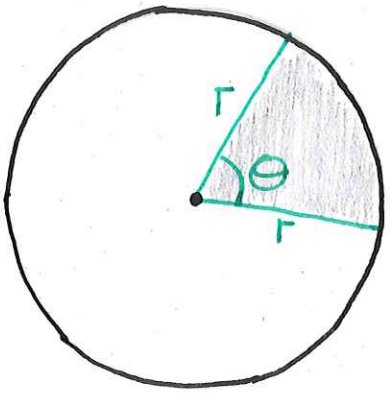
$\div \pi \times 180$

ARC LENGTH



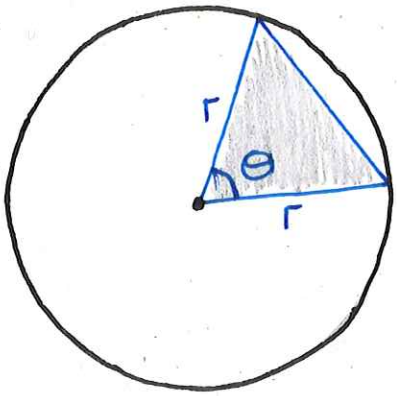
$l = r\theta$

SECTOR AREA



$A = \frac{1}{2}r^2\theta$

AREA TRIANGLE



$A = \frac{1}{2}r^2 \sin\theta$

(Only if θ is in radians)

– TRIG EQUATIONS

Make sure your calculator is in radian mode

Solving $\sin x$

1ST SOLUTION	$\sin^{-1}$
2ND SOLUTION	π – 1st solution
ALL OTHERS	$\pm 2\pi$

Solving $\cos x$

1ST SOLUTION	$\cos^{-1}$
2ND SOLUTION	2π – 2nd solution
ALL OTHERS	$\pm 2\pi$

Solving $\tan x$

1ST SOLUTION	$\tan^{-1}$
ALL OTHERS	$\pm \pi$

– SMALL ANGLE APPROXIMATION

When θ is small (and in radians) then:

$$\sin\theta \approx \theta$$
$$\tan\theta \approx \theta$$
$$\cos\theta \approx 1 - \frac{\theta^2}{2}$$

} Given in the formula booklet (under trig identities)

Example

$$\frac{\sin 2\theta + \tan\theta}{2\theta} = \frac{2\theta + \theta}{2\theta} = \frac{3\theta}{2\theta} = \frac{3}{2}$$