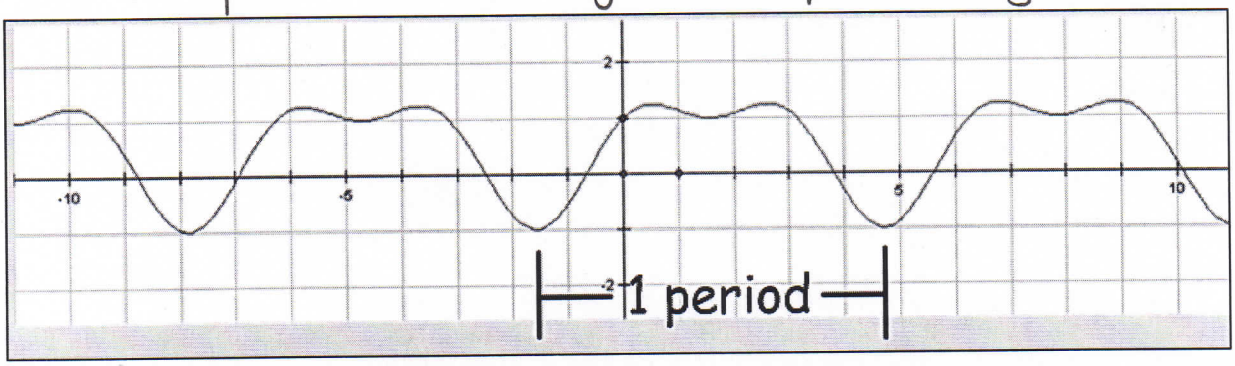
Trig Transformations: Modelling Periodic Behaviour

Date: Notes

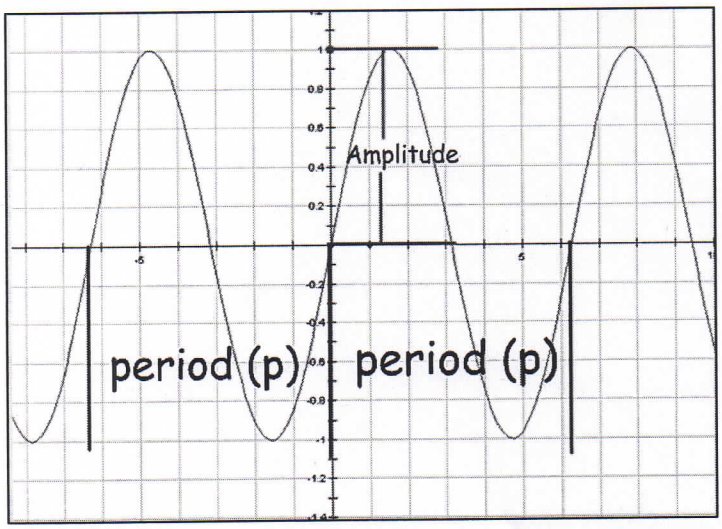
A function is periodic if the y-values repeat at regular intervals



One complete pattern is called a cycle.

The horizontal distance from the beginning of one cycle to the beginning of the next cycle is called the period.

A periodic function is defined by $f(x+p) = f(x)$ where p is the period.



The amplitude of a function is half the distance from the maximum to the min values of the function.

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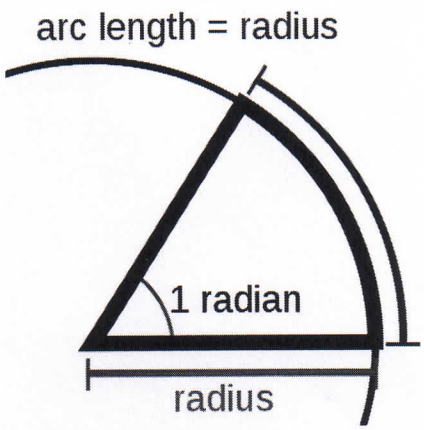
Just so you know!

Another way to measure angles are in radians. Radian is a pure measure based on the Radius of the circle.

Radian: the angle made by taking the radius and wrapping it along the edge of a circle:

Degrees	Radians (exact)	Radians (approx)
30°	π/6	0.524
45°	π/4	0.785
60°	π/3	1.047
90°	π/2	1.571
180°	**π**	**3.142**
270°	3π/2	4.712
360°	**2π**	**6.283**



IMPORTANT ONES TO REMEMBER!

π is 180°

2π is 360°

Changing Degrees to Radian Measure:

Multiply the number of degrees by (π/180) radians.

Eg. Convert 360° into radian measure. $360° \times \frac{\pi}{180°} = \frac{360°\pi}{180°} = \boxed{2\pi}$

Changing Radian Measure to Degrees:

Multiply the number of radians by (180/π)°

Eg. Convert π into degrees. $\pi \times \frac{180}{\pi} = \frac{180\pi}{\pi} = \boxed{180°}$

Homework:

p. 359 #1, 2, 5, 6

Make graphs for y=sinx, y=cosx