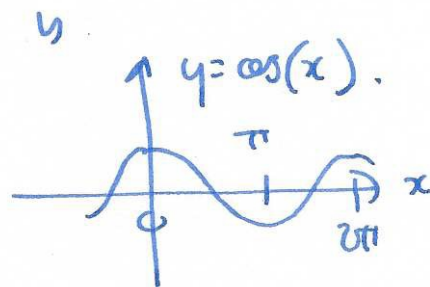
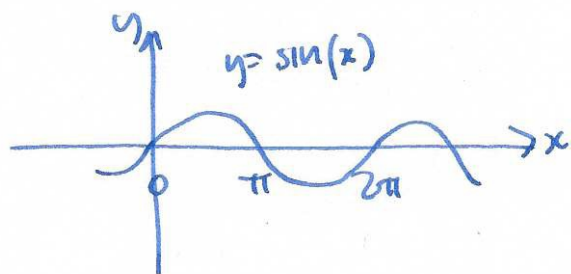


§5.3 Trig graphs

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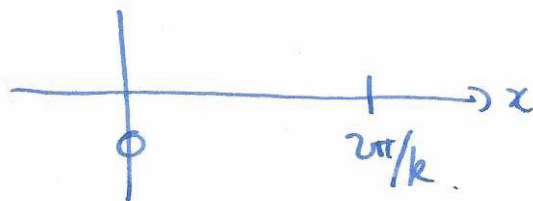


Transformations Ex: $\cos(x) + 2$
 $-\cos(x)$

Vertical stretch : Ex: $4\cos(x)$. $-\frac{1}{2}\sin(x)$.

If $f(x) = \begin{matrix} a\cos(x) \\ a\sin(x) \end{matrix}$ then $|a|$ is the amplitude

Horizontal stretch $\cos(kx)$
 $\sin(kx)$



period is $\frac{2\pi}{k}$.

Ex: $y = \sin(\frac{1}{2}x)$

$y = \cos(3x)$

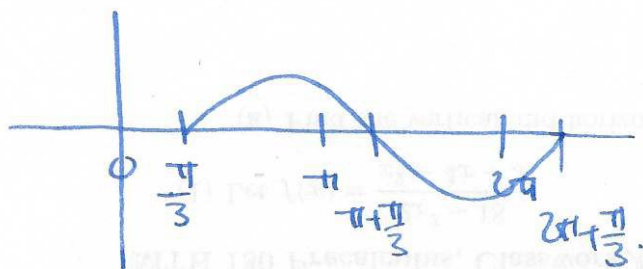
$y = \begin{matrix} a\sin(kx) \\ a\cos(kx) \end{matrix}$ $|a|$ amplitude
 $\frac{2\pi}{k}$ period.

Phase shift

$y = \begin{matrix} a\sin k(x-b) \\ a\cos k(x-b) \end{matrix}$

amplitude $|a|$
 period $\frac{2\pi}{k}$
 phase shift b .

Ex $y = \sin(x - \frac{\pi}{3})$



Ex: $\frac{3}{4}\cos(2x + \frac{2\pi}{3})$