Derive

(5) $\cos(A+B) = \cos A \cos B - \sin A \sin B$

We know that	$\cos B = \cos(-B)$; $-\sin B = \sin(-B)$ } In log tables
and that	(4) $\cos(A-B) = \cos A \cos B + \sin A \sin B$

$$\cos(A-(-B)) = \cos A \cos(-B) + \sin A \sin(-B)$$

$$= \cos(A+B) = \cos A \cos B - \sin A \sin B$$

QED

Derive (6) $\cos 2A = \cos^2 A - \sin^2 A$

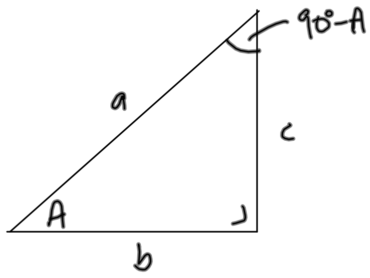
We know that (5) $\cos(A+B) = \cos A \cos B - \sin A \sin B$

$$\Rightarrow \cos(A+A) = \cos A \cos A - \sin A \sin A$$

$$\cos 2A = \cos^2 A - \sin^2 A$$

QED

Consider



$\cos A = \frac{b}{a}$

$\sin(90° - A) = \frac{b}{a}$

$\cos A = \sin(90° - A)$

likewise: $\sin A = \frac{c}{a}$

$\cos(90 - A) = \frac{c}{a}$

$\sin A = \cos(90° - A)$

Derive 7 $\sin(A+B) = \sin A \cos B + \cos A \sin B$

We know that $\cos(90° - A) = \sin A$

$\sin(90° - A) = \cos A$

and 4 $\cos(A-B) = \cos A \cos B + \sin A \sin B$

$$\cos((90 - A) - B) = \cos(90 - A)\cos B + \sin(90 - A)\sin B$$

$$\cos(90 - (A+B)) = \sin A \cos B + \cos A \sin B$$

$$\sin(A+B) = \text{RHS}$$

QED