Uses of Addition Formulae

Q [Textbook] Using a suitable angle formulae, show that $\sin 15° = \frac{\sqrt{6}-\sqrt{2}}{4}$.

Q [Textbook] Given that $\sin A = -\frac{3}{5}$ and $180° < A < 270°$, and that $\cos B = -\frac{12}{13}$, and B is obtuse, find the value of: (a) $\cos(A - B)$ (b) $\tan(A + B)$

Tip: You can get *cos* in terms of *sin* and vice versa by using a rearrangement of $\sin^2 x + \cos^2 x \equiv 1$.
So $\cos A = \sqrt{1 - \sin^2 A}$

Q Given that $\sin A = -\frac{3}{5}$ and $180° < A < 270°$, and that $\cos B = -\frac{12}{13}$, find the value of: (b) $\tan(A + B)$

Test Your Understanding

Without using a calculator, determine the exact value of:

a) $\cos(75°)$

b) $\tan(75°)$

Challenging question

Edexcel June 2013 Q3

Given that

$$2\cos(x + 50)^\circ = \sin(x + 40)^\circ.$$

(*a*) Show, without using a calculator, that

$$\tan x^\circ = \frac{1}{3}\tan 40^\circ.$$

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