4 Angle x is such that $\sin x = a + b$ and $\cos x = a - b$, where a and b are constants.

(i) Show that $a^2 + b^2$ has a constant value for all values of x. [3]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

(ii) In the case where $\tan x = 2$, express a in terms of b. [2]

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....