



Air maths tuition

Interact, engage and perform

Trig. Equations : Factorising Types $f(x)=0$

Solve $2\tan^2 x - \tan x = 6$ for $-180^\circ \leq x \leq 180^\circ$

$\therefore 2\tan^2 x - \tan x - 6 = 0$

$\therefore (2\tan x + 3)(\tan x - 2) = 0$

\therefore either $2\tan x + 3 = 0$ or $\tan x - 2 = 0$

When $2\tan x + 3 = 0$

$\therefore \tan x = -\frac{3}{2}$

$\therefore x = \tan^{-1}\left(-\frac{3}{2}\right)$

$\therefore x = -56.30^\circ, 123.69^\circ$

When $\tan x - 2 = 0$

$\therefore \tan x = 2$

$\therefore x = \tan^{-1} 2$

$\therefore x = 63.43^\circ, -116.56^\circ$

$\therefore x = -116.6^\circ (1dp), -56.3^\circ (1dp), 63.4^\circ (1dp), 123.7^\circ (1dp)$

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