

MX	3	Given that $\cos \theta - 2 \sin \theta + 2 = 0$, which of the following shows the two possible values for $\tan \frac{\theta}{2}$?	1
SP		A. -3 or -1 B. -3 or 1 C. -1 or 3 D. 1 or 3	

D

$$\cos \theta - 2 \sin \theta + 2 = 0$$

$$\frac{1-t^2}{1+t^2} - 2\left(\frac{2t}{1+t^2}\right) + 2 = 0$$

$$1 - t^2 - 4t + 2 + 2t^2 = 0$$

$$t^2 - 4t + 3 = 0$$

$$(t - 1)(t - 3) = 0$$

$$t = 1 \text{ or } 3$$

* These solutions have been provided by [projectmaths](http://projectmaths.com.au) and are not supplied or endorsed by NESA.

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