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Jessica, a maths student, is asked by her teacher to solve the equation  $\tan x = \sin x$ , giving all solutions in the range  $0^\circ \leq x \leq 360^\circ$

The steps of Jessica's working are shown below.

$$\tan x = \sin x$$

Step 1	$\Rightarrow$	$\frac{\sin x}{\cos x} = \sin x$	Write $\tan x$ as $\frac{\sin x}{\cos x}$
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Step 2	$\Rightarrow$	$\sin x = \sin x \cos x$	Multiply by $\cos x$
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Step 3	$\Rightarrow$	$1 = \cos x$	Cancel $\sin x$
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$$\Rightarrow x = 0^\circ \text{ or } 360^\circ$$

The teacher tells Jessica that she has not found all the solutions because of a mistake.

Explain why Jessica's method is not correct.

**[2 marks]**