

Trig tables

Problem

In the tables below, $0 \leq \theta \leq 2\pi$ and any missing functions are either $\sin \theta$, $\cos \theta$ or $\tan \theta$.

Some of the row and column headings are missing. Without using a calculator, try to work out what they could be and complete the table. A function does not appear twice in the same table.

If you think you know what a missing function or value is, make sure you check that it works for all the entries in its row and column!

	$\theta = \dots$	$\theta = \dots$	$\theta = \dots$
	-1	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$
$\tan \theta$	undefined	$\sqrt{3}$	
$\cos \theta$			$-\frac{\sqrt{3}}{2}$

In the next table we have given some more information about θ . Try to identify the missing functions and complete the table. Remember not to use a calculator!

	θ is reflex	$\theta = \dots$	θ is obtuse
		0	$-\frac{3}{5}$
$\sin \theta$		1	$\frac{4}{5}$
	$\frac{12}{5}$	undefined	

- How can you state the exact values of θ in the 1st and 3rd columns of the second table?
- How might the answers change if θ could be any value or you could use functions like $-\sin \theta$ in the tables?
- How could you make your own 'trig table'? What things would you think about?