Guidance for tutors
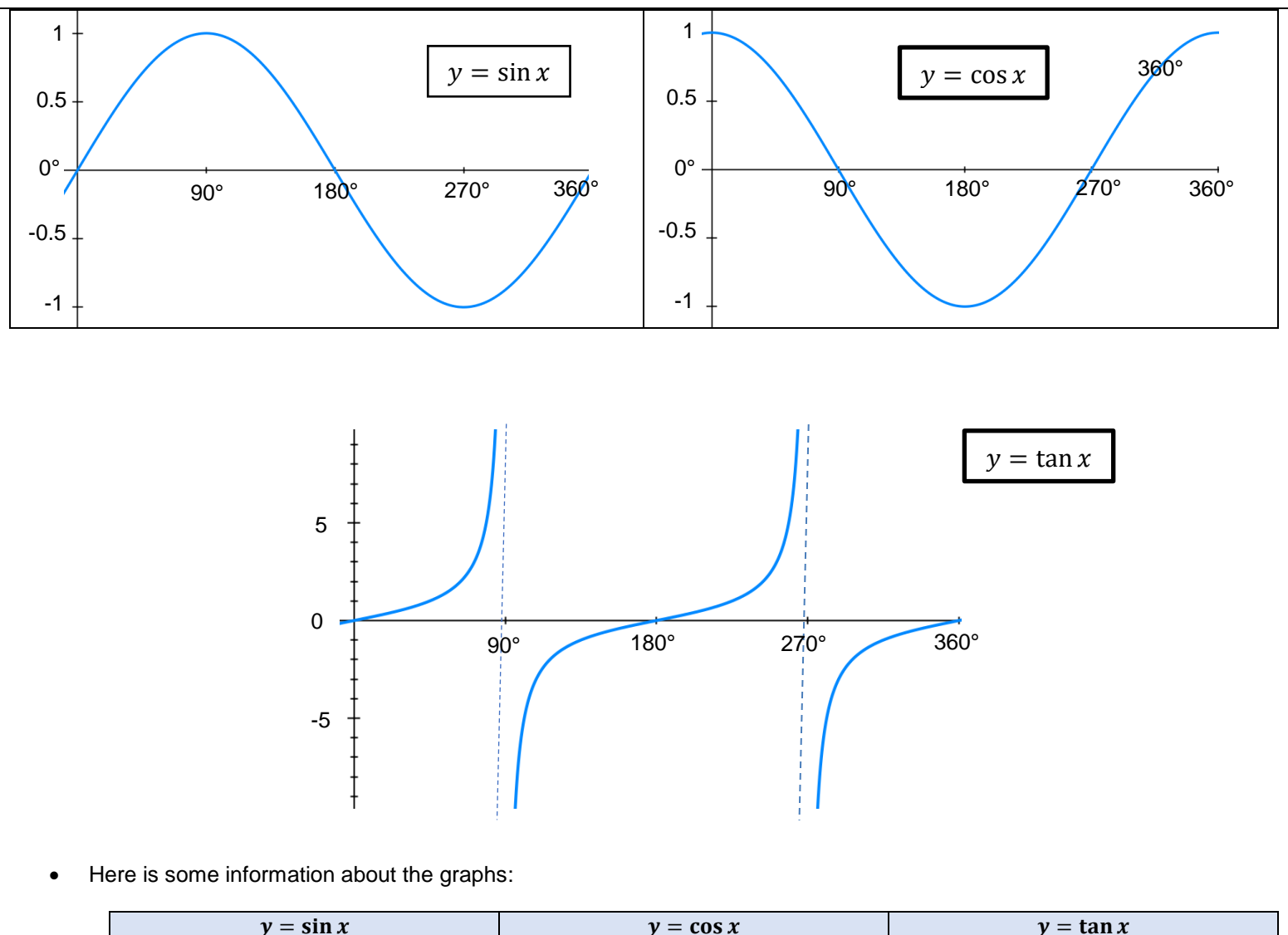
Outcome	SPT8	Student can consistently:	Draw and recognise the graphs of sine, cosine and tangent functions.
How the topic is examined		• Examined through exam paper questions. • This topic is examined on both calculator and non-calculator papers. • Students are expected to know the shape of all three graphs and sketch each of them within the range 0° to 360° • Common questions involve being asked to complete a table of values for one of the graphs and then drawing them or alternatively matching a set of equations to the correct graph.	

Prior knowledge		• Students should be confident with:
		    o Substituting into expressions (AEx5)
		    o Drawing different types of graphs (AG8)
		    o Trigonometry (SPT2 and SPT3)
		• In addition questions on this topic can have links to:
		    o Solving trigonometric equations (SPT10)	

Suggested tuition approaches		• Students need to be able to recognise the shapes of the following graphs:	

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$y = \sin x$

$y = \cos x$

$y = \tan x$

- Here is some information about the graphs:

$y = \sin x$	$y = \cos x$	$y = \tan x$

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		Repeats itself every 360° Its maximum value is 1 Its minimum value is -1	Repeats itself every 360° Its maximum value is 1 Its minimum value is -1	Repeats itself every 180° Has asymptotes at 90° and every 180° after and before. This means that you cannot tan these values. They are undefined.	
	• Students are often asked to match an equation to its graph. Graphs could also include straight lines (AG1) and quadratic graphs (AG5) and graphs from AG8. It is essential that students therefore can recognise the shape of the graph.				
Common errors and misconceptions	• Students mix up sine and cosine graphs. • Students think tangent repeats itself every 360°				

Suggested resources	• Questions
	   o http://www.cimt.org.uk/projects/mepres/allgcse/bka4.pdf (pp 149 - 158)
	   o https://corbettmaths.files.wordpress.com/2013/02/trig-graphs-pdf-pdf
	   o https://www.tes.com/teaching-resource/a-and-a-revision--trig-graphs-6151442
	• Past GCSE Questions
	•
	• Video tutorial
	   o http://www.examsolutions.net/maths-revision/core-maths/trigonometry/graphs/sin-cos-tan/tutorial-1.php
	   o http://corbettmaths.com/2013/04/20/ysinx-graph/ (sine)
	   o http://corbettmaths.com/2013/05/07/cosine-graph/ (cosine)
	   o http://corbettmaths.com/2013/05/12/tangent-graph/ (tangent)				

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