## **Topic: Trigonometry**

Topic/Skill	Definition/Tips						Example
1. Exact		<b>0</b> °	30°	45°	60°	90°	
Values for	sin	0	1	$\sqrt{2}$	$\sqrt{3}$	1	45
Angles in			2	$\frac{1}{2}$	$\frac{1}{2}$		
Trigonometry	cos	1	$\sqrt{3}$	$\sqrt{2}$	1	0	1 1
			$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{-2}}{2}$	2		
	tan	0	1	1	$\sqrt{3}$		
			$\sqrt{3}$	-	vJ		1
2. Sine Rule	Use with <b>non right angle triangles</b> .						
	Use when the question involves 2					85 5.2cm	
	sides and 2 angles.						
	For missing side:					<u>46°</u> x	
	$\underline{a} = \underline{b}$						x 5.2
	$\sin A = \sin B$					$\frac{1}{\sin 85} = \frac{1}{\sin 46}$	
	For missing angle:					F 2 4 5 9 F	
	$\sin A \sin B$						$x = \frac{5.2 \times \sin 85}{100} = 3.75 cm$
	a = b					sin 46	
	There is an <b>ambiguous case</b> (where there are two potential answers) $B$					85	
						1.9m	
						2.4m	
						$\sin \theta$ $\sin 95$	
						$\frac{\sin \theta}{1.0} = \frac{\sin \theta}{2.4}$	
	$\frac{10cm}{6cm}$					1.9 2.4	
						$1.9 \times \sin 85$	
	$46^{\circ}$					$\sin\theta = \frac{1}{2.4} = 0.789$	
	<i>A</i>						
	To find the two angles, use <b>sine</b> to find one, and then <b>subtract your answer</b> <b>from 180</b> to find the other answer.					$\theta = \sin^{-1}(0.789) = 52.1^{\circ}$	
3. Cosine	Use with <b>non right angle triangles</b> .					25	
Rule	Use when the question involves 3					7.8 0.9.6	
	sides	and 1	. angle	e.			
	For missing side:						
		$a^2 =$	$a^2 = b^2 + c^2 - 2bccosA$				$x^2 = 9.6^2 + 7.8^2$
	For missing angle: $\cos A = \frac{b^2 + c^2 - a^2}{2bc}$						$-(2 \times 9.6 \times 7.8)$
						× cos 85)	
						x = 11.8	
	200						









