<u>Trigonometry – 2022 A2 Nov Math</u>

1.	Nov/2022/Paper_9709_31/No.4	
	Solve the equation $tan(x + 45^\circ) = 2 \cot x$ for $0^\circ < x < 180^\circ$.	[5]
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2.	Nov/	'2022/Paper_9709_31/No.6
		Prove the identity $\cos 4\theta + 4\cos 2\theta + 3 \equiv 8\cos^4 \theta$. [4]
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Hence solve the equation $\cos 4\theta + 4\cos 2\theta = 4$ for $0^{\circ} \le \theta \le 180^{\circ}$.	
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3.	Nov	/2022/Paper_9709_32/No.4	
	(a)	Express $4\cos x - \sin x$ in the form $R\cos(x + \alpha)$, where $R > 0$ and $0^{\circ} < \alpha < 90^{\circ}$. State the evalue of R and give α correct to 2 decimal places.	exact [3]
	(b)	Hence solve the equation $4\cos 2x - \sin 2x = 3$ for $0^{\circ} < x < 180^{\circ}$.	[5]
		Q'0'	

4.	Nov/2022/Paper_9709_33/No.7					
	(a)	Show that the equation $\sqrt{5} \sec x + \tan x = 4$ can be expressed as $R \cos(x + \alpha) = \sqrt{5}$, where $R > 0$ and $0^{\circ} < \alpha < 90^{\circ}$. Give the exact value of R and the value of α correct to 2 decimal places. [4]				
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Hence solve the equation $\sqrt{5} \sec 2x + \tan 2x = 4$, for $0^{\circ} < x < 180^{\circ}$.	

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