Cambridge International AS & A Level

Mathematics

9709/32

Paper 3 Pure Mathematics 3

May/June 2025

Question No (4)

http://kingcambridgesolutions.com

Question No (4)

Solve the equation $3 \cot x - 4 \cot 2x = 3 \text{ for } 0^{\circ} \le x \le 180^{\circ}$.

Solution:

DATE:-		
	3 Rotz - 4 cot2x = 3 7	Lor 05 x 5 180
	3 /tana - 4 (1-tanx)=3	- cot zn=1-tam
	2 tank	2tam
	$\frac{3}{\tan x} - 4\left(\frac{1-\tan x}{2\tan x}\right) = 3$	tanzx-ztan
	tanx ztanx	i-tan
	(+ 2)	
	6-4 (1-tanx) = 3	
	Stanx	
	6 - 4 + 4 tan x = 6 tan	Y.
	4 tai x - 6 toux + 6-4=	0
	4 taxx - 6 tan x + 2 20	
	2 actorize	
	4 tanx - utanx - 2 tanx	+200
	utanx (tanx -1)-2 (to	
	(tanx-1) (4 tanx.	-2) =0
	tain=1, uta	M-2-0
i i		
	21 - tan (4) 2 = 45	(stan (/2) = 266
	7-43	$x = 26.6^{\circ}$