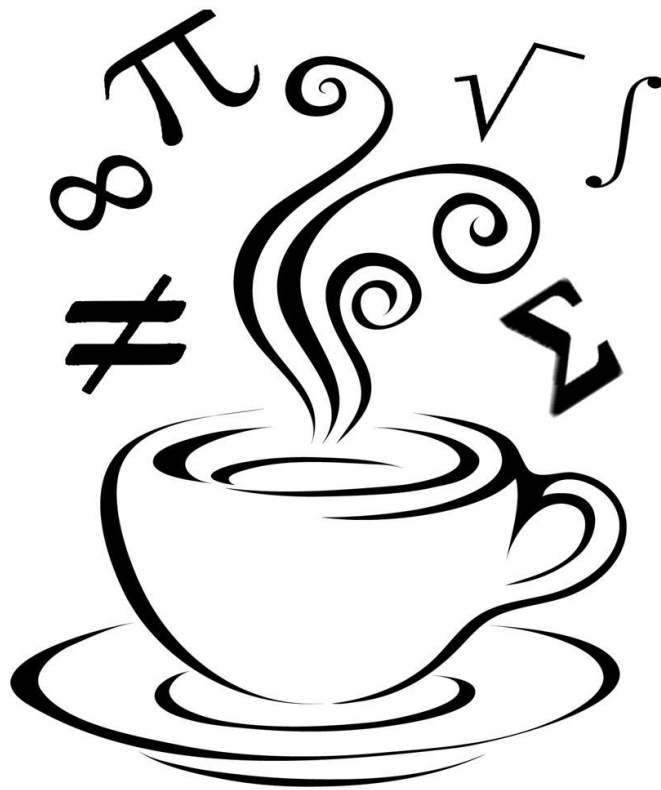


General Solutions ($+ 2\pi n$) of
Multiple Angle Equations

We're Bruyn Math



Shari Bruyn & Associates
Putting the Fun in the Fundamentals of Math

Equations - General Solutions of Multiple Angles in Radians

Solve the multiple angle equations giving the general solution in radians. Match the solution(s) with the problem by drawing a straight line. The line will go through one group of letters and a number. Write the letters below the correct numbers below to find out what happened when two antennas fell in love and got married. Solutions may be used more than once.

1. $\sin(2x) = -1$ •	UTT	MON	• $\frac{\pi n}{2}$				
2. $\tan(2\theta) + 4 = 4$ •	3	10	• $\frac{4\pi}{3} + 4\pi n$				
	ECE	8	• $\frac{3\pi}{4} + \pi n$				
3. $\sec\left(\frac{\theta}{2}\right) = -2$ •	12	ONWA	• $\frac{8\pi}{3} + 4\pi n$				
4. $\cot(2\Phi) + 5 = 6$ •	YWA	4	• $\frac{\pi}{8} + \frac{\pi n}{2}$				
5. $\frac{-2}{5}\sin(3x) = \frac{\sqrt{2}}{5}$ •	9	HER	• $\frac{5\pi}{12} + \frac{2\pi n}{3}$				
	IANT	14	• $\frac{5\pi}{18} + \frac{\pi n}{3}$				
	ILL	15	2				
6. $\csc(3\beta) = -\sqrt{2}$ •	5	SNO	• $\frac{7\pi}{12} + \frac{2\pi n}{3}$				
	ERE		• $\frac{5\pi}{2} + 6\pi n$				
7. $9\tan(3\theta) = -3\sqrt{3}$ •		THEC	• $2\pi + 4\pi n$				
	1	PTI					
8. $-2\cos\left(\frac{\theta}{3}\right) = \sqrt{3}$ •		CHB	• $\frac{\pi}{6} + \frac{\pi n}{2}$				
	TMU						
9. $\cot\left(\frac{\theta}{4}\right) + 1 = 1$ •	11	6	• $\frac{7\pi}{2} + 6\pi n$				
	7						
10. $-3\csc(4\beta) = -2\sqrt{3}$ •		SBR	13				
			• $\frac{\pi}{12} + \frac{\pi n}{2}$				
1	2	3	4	5	6	7	
8	9	10	11	12	13	14	15

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ECE 8 $\frac{3\pi}{4} + \pi n$
3. $\sec\left(\frac{\theta}{2}\right) = -2$ 12 ONWA $\frac{8\pi}{3} + 4\pi n$
4. $\cot(2\Phi) + 5 = 6$ YWA 4 $\frac{\pi}{8} + \frac{\pi n}{2}$
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IANT 14 $\frac{5\pi}{18} + \frac{\pi n}{3}$
ILL 15 2 $\frac{7\pi}{12} + \frac{2\pi n}{3}$
6. $\csc(3\beta) = -\sqrt{2}$ 5 SNO $\frac{7\pi}{12} + \frac{2\pi n}{3}$
ERE THEC $\frac{5\pi}{2} + 6\pi n$
7. $9\tan(3\theta) = -3\sqrt{3}$ 1 PTI $2\pi + 4\pi n$
THEC CHB $\frac{\pi}{6} + \frac{\pi n}{2}$
8. $-2\cos\left(\frac{\theta}{3}\right) = \sqrt{3}$ 11 TMU $\frac{7\pi}{2} + 6\pi n$
CHB 6 $\frac{7\pi}{2} + 6\pi n$
9. $\cot\left(\frac{\theta}{4}\right) + 1 = 1$ 7 SBR $\frac{\pi}{12} + \frac{\pi n}{2}$
SBR 13 $\frac{\pi}{12} + \frac{\pi n}{2}$

THEC	ERE	MON	YWA	SNO	TMU	CHB
1	2	3	4	5	6	7
UTT	HER	ECE	PTI	ONWA	SBR	ILL
8	9	10	11	12	13	14
						IANT
						15

The ceremony was not much but the reception was brilliant.