7.4 - 7.5: (Trigonometric Equations)

The product of all solutions of the equation $\cos x - 2\sin^2 x + 1 = 0$ in the interval	
$[0,2\pi)$ is	
π^2	
A) $\frac{\pi^2}{3}$	
B) $\frac{5\pi^3}{9}$	Trigonometric Equations.
C) $\frac{11\pi^3}{36}$ D) $\frac{\pi^2}{6}$	
$D)\frac{\pi^2}{6}$	
E) $\frac{5\pi^3}{36}$	
The sum of all the solutions of the equation $\cot \theta + \tan \theta = 2$, $0 \le \theta < 2\pi$, is equal to	
A) $\frac{3\pi}{2}$	
B) $\frac{3\pi}{4}$	Trigonometric Equations.
C) 2π	·
$D)\frac{\pi}{2}$	
Ε) π	

If θ is the solution of $4\sin^2\theta + 2\cos^2\theta = 3$, $\frac{3\pi}{2} \le \theta < 2\pi$, then $\sec\theta =$	
A) $\sqrt{2}$	
B) 2	Trigonometric
C) $-\sqrt{2}$	Equations.
C) $-\sqrt{2}$ D) $\frac{2\sqrt{3}}{3}$	
$E) - \frac{2\sqrt{3}}{3}$	
The number of solutions of $(\cos x)(\cos x + 1) = 2$, $0 \le x < 2\pi$ is equal to	
A) 4	
B) 1	Trigonometric Equations.
C) 2	Equations.
D) 3	
E) 5	
The sum of all the solutions of $\sin 2x \cos x + \cos 2x \sin x = 0$, $0 \le x < \pi$ is equal to	
A) [-	
A) 5π	Trigonometric
B) π	Equations.
C) 4π	
D) 2π	
E) 3π	

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The sum of all solutions of the equation $\sin^{-1} x + \tan^{-1} x = 0$ is	
A) zero	
B) a negative irrational number	Trigonometric
C) a positive irrational number	Equations.
D) a negative integer	
E) a positive	
2) a posta e	
If $\cos^{-1} x = 2\sin^{-1} \frac{1}{2}$, then $x =$	
2	
$A)\frac{1}{2}$	
$\frac{A)\frac{1}{2}}{B)\frac{\sqrt{3}}{2}}$	Trigonometric
$(C) - \frac{1}{2}$	Equations.
$D) - \frac{\sqrt{3}}{2}$	
E) 1	
The sum of all the solutions of the equation $2\sin\theta(\sin\theta - 1) = 3(\sin\theta + 1)$, $0 \le \theta < 1$	
360°, is	
A) 540°	
B) 420°	Trigonometric Equations.
C) 360°	Equations.
D) 240°	
E) 620°	

The sum of all the solutions of $\cos \theta - \sin \theta = \sqrt{2} \sin \frac{\theta}{2}$, $0 \le \theta < 2\pi$ is	
A) $\frac{5\pi}{3}$	
$B)\frac{13\pi}{6}$	Trigonometric
$C)\frac{5\pi}{2}$	Equations.
$D)\frac{17\pi}{6}$	
$E)\frac{3\pi}{2}$	
The sum of solutions of the equation $\cos 2x - \cos x = 0$, on the interval $[0, 2\pi)$ is	
(a) 2π	
(b) π	T 2
(c) 4π	Trigonometric Equations.
(d) 3 =	
(e) 5π	
The sum of all solutions of the equation $\sin 2x + 2\sqrt{3}\cos x - \sin x = \sqrt{3}$ over the	
interval $[0,2\pi)$ is	
A) 2π	Trigonometric
B) 5π	Equations.
C) 3π	
D) 4π	
Ε) 6π	

The sum of all solutions of the equation $\tan^{\chi} - \sin \chi = 0$	
The sum of all solutions of the equation: $\tan \frac{x}{2} = \sin x$, $0 \le x < 2\pi$ is equals to A) 2π B) $\frac{\pi}{2}$ C) $\frac{3\pi}{2}$ D) π E) 3π	Trigonometric Equations.
If θ is the solution of the equation $2 \tan \theta + \sec^2 \theta = 4$, $\frac{3\pi}{2} < \theta < 2\pi$ then $\cos \theta =$ A) $\frac{\sqrt{10}}{10}$ B) $\frac{\sqrt{5}}{5}$ C) $\frac{\sqrt{3}}{3}$ D) $\frac{\sqrt{6}}{6}$ E) $\frac{\sqrt{2}}{2}$	Trigonometric Equations.
The sum of all the solutions of $\sin\left(\theta+\frac{\pi}{4}\right)+\sin\left(\theta-\frac{\pi}{4}\right)=-1,\ 0\leq\theta<2\pi,$ is equal to $\frac{A)\ 3\pi}{B)\ 5\pi}$ C) π D) 4π E) 1.5π	Trigonometric Equations.

If $0 \le x < 2\pi$, then the number of all solutions of the equation $2\sin\left(2x + \frac{\pi}{6}\right) - 1 = 0$	
is	
A) 4	Trigonometric
B) 3	Equations.
C) 5	
D) 6	
E) 8	
The number of solution(s) of the equation $\tan x + \sqrt{3} = \sec x$ interval [0,360°) is	
A) One	
A) One	Trigonometric
B) Two	Equations.
C) Three	
D) Four	
E) Five	
The sum of all the solutions of the equation $2 \sin x \cos x - 2 \sin x + \cos x = 1$, in the	
interval $[0,2\pi)$ is	
A) 3π	
B) $\frac{5\pi}{3}$	Trigonometric Equations.
C) 2π	·
$D)\frac{4\pi}{3}$	
$E)\frac{7\pi}{3}$	
3	

The number of all solutions of the equation $\sin x - \cos x = 2$, $0 \le x < 2\pi$, is	
A) 0 B) 2 C) 3 D) 4 E) 1	Trigonometric Equations.
The sum of all the solutions of the equation $2 \sin x \cos x + 3\cos x = 0$ in the interval	
$[0,2\pi)$, is equal to	
A) 2π	
B) $\frac{5\pi}{2}$	Trigonometric Equations.
C) 3π	
D) π	
E) $\frac{3\pi}{2}$	
The sum of all solutions of the equation $\sin 3x \cos x - \cos 3x \sin x - \frac{1}{2} = 0$, where $0 \le 1$	
$x < 2\pi$, is	
A) $\frac{4\pi}{3}$	Trigonometric
B) 0	Equations.
$C)\frac{5\pi}{12}$	
D) π	
E) 3π	

If $0 \le x < 2\pi$, then the sum of all solution(s) of the equation $\sin^2 x - \sin x - 2 = 0$, is	
equal to	
A) $\frac{3\pi}{2}$	
Β) π	Trigonometric
$C)\frac{5\pi}{3}$	Equations.
D) 2π	
$E)\frac{5\pi}{2}$	
The number of solutions of the equation $4\sin^2 x + 2\sqrt{3}\sin x - \sqrt{3} = 2\sin x$, $0 \le x < 1$	
2π is	
A) 4	
B) 5	Trigonometric
C) 3	Equations.
D) 2	
E) 1	
The number of solutions of $\tan^2 \theta = \frac{3}{2} \sec \theta$ on the interval $[0,2\pi)$ is equal to	
A) 2	
B) 3	Trigonometric
C) 1	Equations.
D) 4	
E) 5	
The number of solutions of the equation $4\sin x \cos x = \sqrt{2}$, $0 \le x < 2\pi$, is	
(a) 4	
(b) 1	
(c) 2	Trigonometric Equations.
(d) 3	
(e) 5	

If $0^{\circ} \le x < 360^{\circ}$, then the number of solutions of the equation $4 \tan x \sin^2 x + \tan x - 1$	
$4\sqrt{3}\sin^2 x - \sqrt{3} = 0$, is equal to	
A) 2	Trigonometric
B) 3	Equations.
C) 4	
D) 5	
E) 6	
7 ×	
The sum of the solution(s) of the equation $\sqrt{2}\sec{\frac{x}{2}} + 2 = 0$, in the interval $[0,2\pi)$ is	
3π	
A) $\frac{3\pi}{2}$	Trigonometric
B) $\frac{3\pi}{4}$	Equations.
C) 4π	
D) 2π	
Ε) π	
The sum of the solutions of the equation $\csc^2 x - 2\cot x = 0$ in the inverval $[0,2\pi)$ is	
A) $\frac{3\pi}{2}$	
B) $\frac{5\pi}{2}$	Trigonometric
C) $\frac{5\pi}{4}$	Equations.
D) π	
$E)\frac{9\pi}{4}$	
´ 4	

\mathbf{I} The condition cos λ cos $\lambda\lambda$ is sink sinks $\mathbf{A} = \lambda$. $\lambda = \lambda$. The sinks	
The equation $\cos x \cos 3x + \sin x \sin 3x = \frac{1}{2}, -\pi \le x < 0$, has	
A) 2 solutions	
B) 1 solution	Trigonometric
C) 3 solutions	Equations.
D) 4 solutions	
E) 5 solutions	
E) 3 solutions	
If $0^{\circ} \le x < 360^{\circ}$, then the number of solutions of the equation $4 \sin x \cos x + 5 \cos x =$	
0, is equal to	
A) 2	Trigonometric
B) 1	Equations.
C) 4	
D) 0	
E) 3	
The sum of the solutions of the equation over the interval $[0,2\pi)$ 2 sin $x \cos x$ +	
$2\sin x - \cos x - 1 = 0 \text{ is:}$	
A) 2π	
B) π	Trigonometric
	Equations.
C) $\frac{3\pi}{2}$	
D) 3π	
$E)\frac{7\pi}{6}$	

The sum of solutions of the equation $2\tan x = \sec^2 x$ in the interval $[0,2\pi)$ is equal to	
A) $\frac{3\pi}{2}$	
$B)\frac{\pi}{4}$	Trigonometric Equations.
C) 5π	Equations.
D) π	
$E)\frac{3\pi}{4}$	
The number of solutions of the equation: $\tan \frac{x}{2} = \sin x$, $0 \le x < 2\pi$ is:	
A) 3	
B) 2	Trigonometric Equations.
C) 1	Equations.
D) 4	
E) 5	
The sum of all the solutions of the equation $2\cos x = \sin^2 x - 2$ in $[0,2\pi)$, is equal to	
$A)\pi$	
B) 2π	Trigonometric Equations.
C) 3π	,
$D)\frac{\pi}{2}$	
$E) \frac{3\pi}{2}$	

interval $\left[0, \frac{3\pi}{2}\right]$ is: A) 3 B) 1	
A) 3	
B) 1	Trigonometric
	Equations.
C) 2	
D) 4	
E) 0	
Let n be any integer, then all solutions of the equation $\frac{4\tan\theta}{1-\tan^2\theta} - 2 = 0$ are	
$1-\tan^2\theta$	
A) $(1+4n)\frac{\pi}{8}$	
σ	Trigonometric
C) $(1+4n)\frac{3\pi}{4}$	Equations.
D) $(1+3n)\frac{\pi}{8}$	
E) $(1+3n)\frac{\pi}{6}$	
The sum of solutions of the equation $\cos x \cos 2x - \sin x \sin 2x = 0$, $0 \le x < \pi$, is	
$A)\frac{7\pi}{6}$	
	T 4
	Trigonometric Equations.
$C)\frac{3\pi}{2}$	
$D)\frac{5\pi}{6}$	
E) 3π	

The number of solutions of the equation $3 + \cos 2\theta = 5\cos \theta$, $0 \le \theta \le 4\pi$ is equal to	
A) 8 B) 10 C) 4 D) 6 E) 2	Trigonometric Equations.
The sum of all solutions of the equation $2\sin^2 x - \cos x = 1$ in the interval $[0,3\pi)$ is	
A) 2π B) $\frac{16\pi}{3}$ C) $\frac{11\pi}{12}$ D) 3π E) $\frac{11\pi}{6}$	Trigonometric Equations.
The sum of all solutions of the equation $-2\cos 2x \sin 3x + 2\cos 3x \sin 2x = \sqrt{3}$ in the interval $[-\pi, \pi]$ is A) $-\frac{4\pi}{3}$ B) $-\frac{2\pi}{3}$ C) $\frac{2\pi}{3}$ D) $-\pi$ E) $\frac{\pi}{3}$	Trigonometric Equations.

The equation $\sin x + \cos x = 2$, $0 \le x < 2\pi$, has	
A) no solution	
B) 3 solutions	Trigonometric Equations.
C) 1 solution	29444.0113.
D) 4 solutions	
E) 2 solutions	
The number of solutions of the equation $2\cos^2 3\theta - 2\cos 3\theta - \sqrt{3}\cos 3\theta + \sqrt{3} = 0$;	
$0 \le x < 2\pi$ is:	
A) 9	Trigonometric
B) 4	Equations.
C) 5	
D) 6	
E) 3	
The sum of solutions of the equation $2 \sin^2 \frac{x}{2} = \cos x$, over the interval $[0,2\pi)$ is equal	
to	
(a) 2π	
(b) in	Trigonometric Equations.
(c) 3 =	Lquations.
(d) 4π	
$(e) -\pi$	

If $0^{\circ} \le x < 360^{\circ}$, then the sum of all solutions of the equation $4\cos 2x = 8\sin x \cos x$	
is equal to	
A) 630°	Trigonometric
B) 135°	Equations.
C) 505°	
D) 545°	
E) 475°	
The solution set of $\sqrt{3}\sin x + \cos x - 1 = 0$ is equal to A) $\left\{2\pi k, \frac{2\pi}{3} + 2k\pi, \text{ where } k \text{ is an integer }\right\}$	
B) $\left\{\frac{\pi}{4} + 2\pi k, \frac{5\pi}{4} + 2k\pi, \text{ where } k \text{ is an integer } \right\}$	Trigonometric Equations.
C) $\left\{2\pi k, \frac{2\pi}{3} + 2k\pi, \frac{4\pi}{3} + 2k\pi \text{ where } k \text{ is an integer } \right\}$	
D) $\{2\pi k$, where k is an integer $\}$	
E) $\left\{2\pi k, \frac{5\pi}{3} + 2k\pi, \text{ where } k \text{ is an integer } \right\}$	

The solution set of the equation $\cot^2 x = \cos x = 1 - 0$, $0 < x < 2\pi$ is:	
The solution set of the equation $\cot^2 x - \csc x - 1 = 0$, $0 \le x < 2\pi$ is: A) $\left\{ \frac{\pi}{6}, \frac{5\pi}{6}, \frac{3\pi}{2} \right\}$ B) $\left\{ \frac{\pi}{6}, \frac{7\pi}{6}, \frac{\pi}{2} \right\}$ C) $\left\{ \frac{\pi}{3}, \frac{2\pi}{3}, \frac{3\pi}{2} \right\}$ D) $\left\{ \frac{\pi}{2}, \frac{7\pi}{6}, \frac{11\pi}{6} \right\}$ E) $\left\{ \frac{\pi}{6}, \frac{7\pi}{6}, \pi \right\}$	Trigonometric Equations.
The sum of all solutions of the equation $4 \sin 2x + \sin 4x = 0$, $0 \le x < 2\pi$ is	
A) 3π B) $\frac{7\pi}{3}$ C) $\frac{13\pi}{6}$ D) $\frac{5\pi}{2}$ E) 5π	Trigonometric Equations.
The sum of all the solutions of the equation $\tan x \cos x - \tan x - \cos x + 1 = 0$, in $[0,2\pi)$ is equal to $\frac{A)\frac{3\pi}{2}}{B}$ $B)\frac{\pi}{4}$ $C)\frac{13\pi}{4}$ $D)\frac{13\pi}{12}$ $E)\frac{5\pi}{2}$	Trigonometric Equations.

The number of solutions of the equation $4 \cos \theta \sin \theta = \sqrt{3}$ over the interval $[0^{\circ}, 360^{\circ})$	
is	
A) 4	
B) 5	Trigonometric Equations.
C) 3	
D) 2	
E) 1	
The solution of the equation $\cos^{-1} x + \tan^{-1} \frac{5}{12} = \frac{\pi}{2}$ is	
5	
A) $\frac{5}{13}$	
B) $-\frac{12}{13}$	Trigonometric
C) $\frac{13}{12}$	Equations.
D) $-\frac{13}{5}$	
E) $\frac{7}{12}$	
The sum of all solutions of the equation $\sin 2x \cos x + \cos 2x \sin x + \frac{1}{2} = 0$, where $0 < 1$	
The sum of all solutions of the equation $\sin 3x \cos x - \cos 3x \sin x - \frac{1}{2} = 0$, where $0 \le 1$	
$x < 2\pi$, is	
$A)\frac{4\pi}{3}$	
B) 0	Trigonometric Equations.
$C)\frac{5\pi}{12}$	
D) π	
E) 3π	

The solution set of the equation $2\cos^{-1}\left(\frac{x-\pi}{3}\right) = 2\pi$ is	
The solution set of the equation $2\cos\left(\frac{\pi}{3}\right) = 2\pi$ is A) $\{\pi - 3\}$ B) $\{\pi + 2\}$ C) $\{4 - \pi\}$ D) $\{2\pi - 3\}$ E) $\{\pi\}$	Trigonometric Equations.
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The sum of all solutions of the equation $-2\cos 2x\sin 3x + 2\cos 3x\sin 2x = \sqrt{3}$ on	
$[-\pi,\pi]$ is	
A) $-\pi$	
$B)-\frac{\pi}{3}$	Trigonometric Equations.
$C)-\frac{2\pi}{3}$	4
D) π	
$E)\frac{2\pi}{3}$	
The number of all solutions of the equation $\sin \theta = \sec \theta$ for $0 \le \theta < 2\pi$ is	
(a) 0 (b) 1	Trigonometric
(c) 2	Equations.
(d) 3 (e) 4	
The sum of all solutions of the equation $4\cos^2\theta - 4\cos\theta = -1$, $0 \le \theta < 2\pi$, is	
(a) 2π (b) π	Trigonometric Equations.
(c) 3π (d) 4π	Equations.
(e) 0	