

A2.A.68: Trigonometric Equations 3: Solve trigonometric equations for all values of the variable from 0° to 360°

- 1 Which value of x does *not* satisfy the equation $\sin^2 x + \sin x = 0$?
1) $\frac{\pi}{2}$ 2) 2π 3) $\frac{3}{2}\pi$ 4) π
- 2 Which is a solution for the equation $\sin^2 \theta + 4 \sin \theta = 0$?
1) $\frac{\pi}{6}$ 2) $\frac{\pi}{2}$ 3) π 4) $\frac{3\pi}{2}$
- 3 Which value of θ satisfies the equation $2 \cos^2 \theta - \cos \theta = 0$?
1) $\frac{\pi}{3}$ 2) $\frac{\pi}{4}$ 3) $\frac{\pi}{6}$ 4) 0
- 4 Which value of θ satisfies the equation $2 \sin^2 \theta - 5 \sin \theta - 3 = 0$?
1) 300° 2) 210° 3) 150° 4) 30°
- 5 In the interval $0^\circ \leq \theta < 360^\circ$, how many values of θ satisfy the equation $\sin^2 \theta = \frac{1}{4}$?
- 6 If θ is an angle in Quadrant I and $\tan^2 \theta - 4 = 0$, what is the value of θ to the *nearest degree*?
- 7 In the interval $0 \leq x \leq 2\pi$, the solutions of the equation $\sin^2 x = \sin x$ are
- 8 In the interval $0^\circ \leq \theta \leq 360^\circ$, how many values of θ satisfy the equation $3 \sin^2 \theta + \sin \theta - 2 = 0$?
- 9 Which values of x in the interval $0^\circ \leq x < 360^\circ$ satisfy the equation $2 \sin^2 x + \sin x - 1 = 0$?
- 10 In the interval $0^\circ \leq \theta \leq 360^\circ$, how many values of θ satisfy the equation $\tan^2 \theta - 3 \tan \theta + 2 = 0$?
- 11 What is the total number of solutions for the equation $3 \tan^2 A + \tan A - 2 = 0$ in the interval $0 \leq A \leq \pi$?

A2.A.68: Trigonometric Equations 3: Solve trigonometric equations for all values of the variable from 0° to 360°

Answer Section

1 ANS: 1 REF: 088929siii

2 ANS: 3 REF: 088425siii

3 ANS: 1 REF: 080023siii

4 ANS: 2 REF: 069930siii

5 ANS:
4

REF: 088732siii

6 ANS:
63

REF: 019919siii

7 ANS:

$0, \frac{\pi}{2}, \pi$

REF: 019528siii

8 ANS:
3

REF: 068033siii

9 ANS:
 $\{30^\circ, 150^\circ, 270^\circ\}$
 $(2 \sin x - 1)(\sin x + 1) = 0$

$\sin x = \frac{1}{2}, -1$

$x = 30, 150, 270$

REF: 081514a2

10 ANS:
4

REF: 018434siii

11 ANS:
2

REF: 069027siii