

Name: _____

Pre AP Pre Calculus

10.5 Mixed Solving Equations Worksheet

Solve each equation on the indicated domain, show all of your work on a separate paper.

1. $4\cos^2 \theta + 4\cos \theta = -1$

$\theta \in [0^\circ, 360^\circ)$

12. $\sin 2x = \cos x$

$x \in [0, 2\pi)$

2. $\sin x \cos x = -\frac{1}{2}$

$x \in [0, 2\pi)$

13. $\tan 2(\theta + 41^\circ) = 1$

$\theta \in [0^\circ, 360^\circ)$

3. $2\sin^2 x - 5\sin x + 2 = 0$

$x \in [0, 2\pi)$

14. $\sin \theta \cos 37^\circ = \cos \theta \sin 37^\circ$
 $\theta \in [0^\circ, 360^\circ)$

4. $\cos^2 x - \sin^2 x = 0$

$x \in [0, 2\pi)$

15. $\cos 2x - \sin x = 1$
 $x \in [0, 2\pi)$

5. $4\sin^2 \theta - 3 = 0$

$\theta \in [0^\circ, 360^\circ)$

16. $\sin 2x + \cos x = 0$
 $x \in [0, 2\pi)$

6. $\cos 2x = 2 - 2\sin^2 x$

$x \in [0, 2\pi)$

17. $4\sin x \cos x = -\sqrt{3}$
 $x \in (-\pi, \pi)$

7. $\cos 4x \cos x + \sin 4x \sin x = -1$
 $x \in [0, 2\pi)$

18. $\cos 2x + \sin^2 x = 0$
 $x \in [0, 2\pi)$

19. $2\cos^2 x - 2\cos 2x = 1$
 $x \in [0, 2\pi)$

8. $\frac{\sin\left(\frac{\pi}{2} - x\right)}{\sin x} = -\sqrt{3}$
 $x \in \left(-\frac{3\pi}{2}, \frac{3\pi}{3}\right)$

20. $\sin 2x - \cos x = 0$
 $x \in [0, 2\pi)$

9. $\tan(90^\circ - \theta) = -\frac{\sqrt{3}}{3}$
 $\theta \in (-180^\circ, 180^\circ)$

21. $\cos 2x + \cos x = 0$
 $x \in [0, 2\pi)$

10. $\sin 2\theta \cos 58^\circ + \cos 2\theta \sin 58^\circ = \frac{\sqrt{3}}{2}$
 $\theta \in [0^\circ, 360^\circ)$

22. $(\sin x - \cos x)^2 = 1$
 $x \in [0, 2\pi)$

11. $\cos 3\theta \cos 12^\circ - \sin 3\theta \sin 12^\circ = \frac{1}{2}$
 $\theta \in (-180^\circ, 180^\circ)$

23. $\sin x \cos x + \frac{1}{2} = 0$
 $x \in [0, 2\pi)$