

Precalculus 6.3 Homework

Name _____ Date _____ Per _____

Find all real numbers in the interval $[0, 2\pi)$ that satisfy each equation. Round approximate answers to the nearest tenth.

1. $2 \sin^2 x = \sin x$

2. $2 \cos^2 x + 3 \cos x = -1$

3. $5 \sin^2 x - 2 \sin x = \cos^2 x$

4. $\sin(2x) = \sin(x)$

5. $\cos(2x) + \sin^2 x = 0$

6. $3 \sec^2 x \tan x = 4 \tan x$

7. $2 \sin x = \cos x$

8. $\sin x \cos\left(\frac{\pi}{4}\right) + \cos x \sin\left(\frac{\pi}{4}\right) = \frac{1}{2}$

Find all values of x in the interval $[0^\circ, 360^\circ)$ that satisfy each equation. Round approximate answers to the nearest tenth of a degree.

9. $2 \tan^2 x = \tan x$

10. $2 \sin^2 x + \sin x = 1$

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

12. $\sqrt{3} \sin(2x) = \cos(2x)$

13. $\sin(3x) = \csc(3x)$

14. $9 \sin^2 x + 12 \sin x + 4 = 0$

15. $\csc x - \cot x = \sqrt{3}$

16. $8 \cos^4 x - 10 \cos^2 x + 3 = 0$ (Hint: $u = \cos^2 x$)