

## Dynamics of Trigonometry – Solving Trigonometric Equations for ALL solutions

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Block: \_\_\_\_\_

Solve the following equations for the variable on the interval  $0 \leq \theta < 2\pi$ .

$$1. \quad 2 \sin \theta = 1$$

$$5. \quad \sin \theta + 1 = 0$$

$$9. \quad \tan^2 \theta = 1$$

$$2. \quad -2 \cos \theta = 1$$

$$6. \quad \tan^2 \theta = 3$$

$$10. \quad \cos \theta \tan \theta = \cos \theta$$

$$3. \quad \tan \theta + \sqrt{3} = 0$$

$$7. \quad \sqrt{2} \cos \theta = 1$$

$$11. \quad \sin^2 \theta = \sin \theta$$

$$4. \quad \frac{\cos \theta}{\sqrt{3}} = \frac{1}{2}$$

$$8. \quad -2 \sin \theta = \sqrt{2}$$

$$12. \quad 2 \cos^2 \theta = \cos \theta$$

Solve the following equations for the variable and write in general solution format in radians.

$$13. \cos \theta - 1 = 0$$

$$19. 2 \cos \theta \sin \theta = \sqrt{3} \sin \theta$$

$$14. \sin \theta + \frac{\sqrt{3}}{2} = 0$$

$$20. \tan^2 \theta = \tan \theta$$

$$15. \tan \theta = -\frac{\sqrt{3}}{3}$$

$$21. \tan^2 \theta = \sqrt{3} \tan \theta$$

$$16. \sin \theta + 1 = 1$$

$$22. \sin^2 \theta + 2 \sin \theta + 1 = 0$$

$$17. \cos \theta - 2 = -2$$

$$23. \cos^2 \theta - 2 \cos \theta + 1 = 0$$

$$18. \tan \theta = \frac{8}{0}$$

$$24. \tan^4 \theta - 2 \tan^2 \theta + 1 = 0$$