**Find all solutions of the equation.**

1. sin x = $-\frac{\sqrt{2}}{2}$ 2. tan θ = $\sqrt{3}$ 3. sec β = 2

4. sin x = $\frac{π}{2}$ 5. cos θ = $\frac{1}{\sec(θ)}$ 6. 2 cos2θ - $\sqrt{3}$ = 0

7. $\sqrt{3}\tan(\frac{1}{3})t=1$ 8. sin (θ + $\frac{π}{4}$) = $\frac{1}{2}$ 9. sin (2x - $\frac{π}{3}$) = $\frac{1}{2}$

10. 2 cos t + 1 = 0 11. tan2 x = 1 12. (cos θ - 1)(sin θ + 1) = 0

13. 2 cos x = $\sqrt{3}$ 14. sec2 α - 4 = 0 15. $\sqrt{3}$ + 2 sinβ = 0

16. cot2 x - 3 = 0 17. (2 sin θ + 1)(2 cos θ + 3) = 0 18. (2 sin u - 1)(cos u - $\sqrt{2}$) = 0

**Find the solutions of the equation that are in the interval [0, 2π).**

19. cos (2x - $\frac{π}{4}$) = 0 20. 2 - 8 cos2 t = 0 21. 2 sin2 u = 1 - sin u

22. tan2 x sin x = sin x 23. 2 cos2γ + cos γ = 0 24. sin2 θ + sin θ - 6 = 0

**Approximate, to the nearest 10', the solutions of the equation in the interval [0°, 360°).**

25. sin2 t - 4 sint + 1 = 0 26. cos2 t - 4 cos t + 2 = 0

 

27. Many animal populations, such as that of rabbits, fluctuate over ten-year cycles. Suppose that the number of rabbits at time t (in years) is given by N(t) = 1000 cos $\frac{π}{5}t+4000. $

(a) Sketch the graph of N for 0 ≤ t ≤ 10.



(b) For what values of t in part (a) does the rabbit population exceed 4500?