Chapter P Review Topics: Trig Equations and Log Equations

Solve each equation for $0 \leq x < 2\pi$.

1) $(2\sin x - 1)(2\cos^2 x - 1) = 0$

2) $4\sin^2 x + 1 = -4\sin x$

3) $\sqrt{2}\tan x = 2\sin x$

4) $\sin x = \cos 2x - 1$

5) $\cot^2 x - \csc x = 1$

6) $\sin x + \cos x = 0$

7) Find all values of θ between 0 and 2π that satisfy $-1 - 3\sin\theta = \cos 2\theta$

8) $\sin x = -\frac{1}{2}$

9) $\cos x \tan x - 2\cos^2 x = -1$

10) $3\tan^2 x = \sqrt{3}\tan x$

11) $2\cos^2 x = 3\sin x$

12) $\sin x \cos x = \frac{1}{2}$

13) $\cos^2 x - \sin^2 x = \frac{\sqrt{3}}{2}$

Solve each equation

14) $\log_2 x = 5$

15) $\log_7 n = \frac{2}{3}\log_7 8$

16) $\log_6 (4x + 4) = \log_6 64$

17) $2\log_6 4 - \frac{1}{4}\log_6 16 = \log_6 x$

Use natural logarithms to solve each equation

18) $9^{x-4} = 7.13$

19) $25e^x = 1000$

20) $5^x = 4^{x+3}$

21) $\frac{1}{3}\log x = \log 8$

22) $4\log(x + 3) = 9$

22b) $0.25 = \log 16^x$

Solve each equation

23) $\log_5(x+4) + \log_5 8 = \log_5 64$

24) $\log_4(x-3) + \log_4(x+3) = 2$

25) $\frac{1}{2}(\log_7 x + \log_7 8) = \log_7 16$

26) $2\log_5(x-2) = \log_5 36$

27) $\log_3 3 + \log_3 x = \log_3 45$

28) $2\log_6 4 - \frac{1}{3}\log_6 8 = \log_6 x$