

Math 121 – Section 7.1 Solutions

13. $\sin^{-1} 0 = 0$

15. $\sin^{-1}(-1) = -\frac{\pi}{2}$

17. $\tan^{-1} 0 = 0$

19. $\sin^{-1} \frac{\sqrt{2}}{2} = \frac{\pi}{4}$

21. $\tan^{-1} \sqrt{3} = \frac{\pi}{3}$

23. $\cos^{-1} \left(-\frac{\sqrt{3}}{2} \right) = \frac{5\pi}{6}$

37. $\cos^{-1} \left(\cos \frac{4\pi}{5} \right) = \frac{4\pi}{5}$

39. $\tan^{-1} \left[\tan \left(-\frac{3\pi}{8} \right) \right] = -\frac{3\pi}{8}$

41. $\sin^{-1} \left(\sin \frac{9\pi}{8} \right) = -\frac{\pi}{8}$

43. $\tan^{-1} \left(\tan \frac{4\pi}{5} \right) = \frac{4\pi}{5} - \pi = -\frac{\pi}{5}$

45. $\sin \left(\sin^{-1} \frac{1}{4} \right) = \frac{1}{4}$

47. $\tan(\tan^{-1} 4) = 4$

49. $\cos(\cos^{-1} 1.2)$ is not defined

51. $\tan(\tan^{-1} \pi) = \tan 0 = 0$

61. Solve $4 \sin^{-1}(x) = \pi$.

$$\begin{aligned}4 \sin^{-1}(x) &= \pi \\ \sin^{-1}(x) &= \frac{\pi}{4} \\ x &= \sin \frac{\pi}{4} \\ x &= \frac{\sqrt{2}}{2}\end{aligned}$$

63. Solve $3 \cos^{-1}(2x) = 2\pi$.

$$\begin{aligned}3 \cos^{-1}(2x) &= 2\pi \\ \cos^{-1}(2x) &= \frac{2\pi}{3} \\ 2x &= \cos \frac{2\pi}{3} \\ 2x &= -\frac{1}{2} \\ x &= -\frac{1}{4}\end{aligned}$$

65. Solve $3 \tan^{-1}(x) = \pi$.

$$\begin{aligned}3 \tan^{-1}(x) &= \pi \\ \tan^{-1}(x) &= \frac{\pi}{3} \\ x &= \tan \frac{\pi}{3} \\ x &= \sqrt{3}\end{aligned}$$