ICM Trigonometry Worksheet #9

Without using a calculator, give an exact value for θ.

1. $\theta = \sin^{-1}\frac{1}{2}$ $\frac{\pi}{6}$

2. $\theta = \sin^{-1} 1$ $\frac{\pi}{2}$

3. $\theta = \cos^{-1}\frac{\sqrt{3}}{2}$ $\frac{\pi}{6}$

4. $\theta = \cos^{-1}\left(-\frac{1}{2}\right)$ $\frac{2\pi}{3}$

5. $\theta = \tan^{-1} 1$ $\frac{\pi}{4}$

6. $\theta = \tan^{-1}\frac{\sqrt{3}}{3}$ $\frac{\pi}{6}$

7. $\theta = \sin^{-1}\left(-\frac{1}{2}\right)$ $-\frac{\pi}{6}$

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

9. $\theta = \sin^{-1}\left(-\frac{\sqrt{3}}{2}\right)$ $-\frac{\pi}{3}$

10. $\theta = \cos^{-1}(-1)$ π

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

12. $\theta = \cos^{-1} 1$ 0

13. $\theta = \tan^{-1}(-1)$ $-\frac{\pi}{4}$

14. $\theta = \tan^{-1}\left(-\sqrt{3}\right)$ $-\frac{\pi}{3}$

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

Use your **calculator** to find a value of θ to the nearest hundredth of a radian.

16. $\theta = \sin^{-1} 0.5683$ .60

17. $\theta = \sin^{-1} 0.5000$ .52

18. $\theta = \sin^{-1}(-0.8671)$ -1.05

19. $\theta = \cos^{-1} 0.1234$ 1.45

20. $\theta = \cos^{-1}(-0.2845)$ 1.86

21. $\theta = \cos^{-1} 0.8888$ .48

22. $\theta = \tan^{-1} 0.5000$ .46

23. $\theta = \tan^{-1}(-1.5000)$ $-.98$

24. $\theta = \tan^{-1}(-2.3456)$ -1.17

25. $\theta = \tan^{-1}(0.4872)$ .45