PC 6-1 Inverse Trigonometry Practice

The easy inverse trig problems…..find the exact value of each.			
1. $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$	2. $cos^{-1}\left(\frac{\sqrt{2}}{2}\right)$	3. $sin^{-1}\left(\frac{\sqrt{3}}{2}\right)$	4. $cos^{-1}\left(\frac{1}{2}\right)$
5. $sin^{-1}\left(\frac{1}{2}\right)$	6. $cos^{-1}\left(\frac{\sqrt{3}}{2}\right)$	7. $tan^{-1}(\sqrt{3})$	8. $tan^{-1}\left(\frac{\sqrt{3}}{3}\right)$

9. What was it about the problems above that were easy? What was it about them that was hard?

The medium inverse trig problems…..find the exact value of each.			
10. $cos^{-1}\left(\frac{-\sqrt{3}}{2}\right)$	11. $sin^{-1}\left(\frac{-\sqrt{3}}{2}\right)$	12. $cos^{-1}\left(-\frac{1}{2}\right)$	13. $sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)$
14. $cos^{-1}(1)$	15. $sin^{-1}\left(-\frac{1}{2}\right)$	16. $cos^{-1}\left(-\frac{\sqrt{2}}{2}\right)$	17. $tan^{-1}\left(-\frac{\sqrt{3}}{3}\right)$
18. $tan^{-1}(-\sqrt{3})$	19. $tan^{-1}(-1)$	20. $tan^{-1}(0)$	21. $cos^{-1}(-0)$

22. What was it about the problems above that were a little more difficult?

The harder inverse trig problems…..find the exact value of each.		
23. $cos^{-1}(\sin(30°))$	24. $sin^{-1}\left(\cos\left(\frac{3\pi}{4}\right)\right)$	25. $cos^{-1}\left(\sin\left(\frac{7\pi}{6}\right)\right)$
26. $\cos^{-1}\left(\sin\frac{-\pi}{6}\right)$	27. $sin\left(cos^{-1}\left(-\frac{1}{2}\right)\right)$	28. $cos\left(sin^{-1}\left(-\frac{\sqrt{2}}{2}\right)\right)$

The rest of the problems are the trickiest, but very manageable when you've got the basics down.

29. $\sec(3\sin^{-1}\frac{1}{2})$

30. $\csc(4\tan^{-1}\sqrt{3})$

31. $\tan^{-1}(\tan\frac{5\pi}{6})$

Not bad if you've gotten this far….but there are more tricks to know….keep going!!!

32. Given $\theta = \cos^{-1}(-\frac{1}{3})$, draw a reference triangle.

33. Given $\theta = \tan^{-1}(-4)$, draw a reference triangle.

34. Find $\tan(\cos^{-1}\frac{2}{3})$

35. Find $6\sec(\sin^{-1}-\frac{1}{3})$

36. Find $10\cot(\sin^{-1}-\frac{4}{5})+20\csc(\cos^{-1}-\frac{3}{5})$