Pre-Calculus Test Review Name_____

I. Describe the transformations.

1. $y=\frac{1}{2}\sin^{-1}(3x-\pi)+1$
2. $y=5\cos^{-1}-2(x)-4$
3. $y=-\tan^{-1}(x+\pi)+(-7)$

II. Evaluate each inverse expression for principal values only and write your final answer as an exact value. If no solution exists put "DNE".

7. $\arcsin\left(\frac{\sqrt{3}}{2}\right)$
8. $\arcsin\left(-\frac{1}{2}\right)$
9. $\operatorname{arccot}(\sqrt{3})$
10. $\sec^{-1}\left(\frac{-2\sqrt{3}}{3}\right)$
11. $\arctan\left(-\frac{\sqrt{3}}{3}\right)$
12. $\arcsin\left(\frac{\sqrt{2}}{2}\right)$
13. $\sec^{-1}(2)$
14. $\sin^{-1}(-2)$
15. $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)$
16. $\arccos\left(-\frac{1}{2}\right)$
17. $\cot^{-1}(-1)$
18. $\csc^{-1}(\sqrt{2})$

III. Evaluate each composition for principal values only and write your final answer as an exact value. If no solution exists put "DNE".

19. $\sin(\sin^{-1}(1.7))$
20. $\sin^{-1}\left(\sin\left(\frac{5\pi}{3}\right)\right)$
21. $\csc\left(\cos^{-1}\left(\frac{\sqrt{2}}{2}\right)\right)$
22. $\cos^{-1}\left(\sin\left(\frac{5\pi}{6}\right)\right)$
23. $\sec\left(\tan^{-1}\left(\frac{3}{4}\right)\right)$
24. $\sin^{-1}\left(\cos\left(\frac{7\pi}{6}\right)\right)$
25. $\cot\left(\cos^{-1}x\right)$
26. $\csc\left(\tan^{-1}\left(\frac{1}{x}\right)\right)$
27. $\tan\left(\cos^{-1}\left(\frac{x}{3}\right)\right)$
28. $\cot\left(\cos^{-1}\frac{1}{x}\right)$
29. $\sin\left(\tan^{-1}\frac{\sqrt{2}}{x}\right)$
30. $\tan\left(\cos^{-1}\frac{x}{\sqrt{x^2+3}}\right)$
31. $\cot\left(\sin^{-1}\left(-\frac{1}{2}\right)+\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right)\right)$
32. $\csc\left(-2\sin^{-1}(1)+\tan^{-1}(1)\right)$
33. $\sin^{-1}\left(\frac{1}{2}\csc\left(\frac{\pi}{4}\right)+\tan(-\pi)\right)$
34. $\sec^{-1}\left(2\sin\left(-\frac{\sqrt{2}}{2}\right)+2\cot^{-1}(1)\right)$