Name:_____ PreAP PreCalculus

Unit 8 Test Review

Find the value of θ where $0 \le \theta < 2\pi$

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

2. $\cos^{-1}(-1) = \theta$

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

4. $\csc^{-1}(2) = \theta$

5. $\arccos\left(\frac{\sqrt{2}}{2}\right) = \theta$

Find the general solutions to the equation

6. $\tan x = -\sqrt{3}$

7. $\sin x = \frac{\sqrt{2}}{2}$

8. $\cos x = \frac{-\sqrt{3}}{2}$

9. $\csc x = 1$

Find the exact principal value

10. $\cos x = \frac{-1}{\sqrt{2}}$

11. $\sin x = -1$

12. $\tan x = \frac{-\sqrt{3}}{3}$

List the restricted ranges of each

13. $y = \sin^{-1} x$

14. $y = \cos^{-1} x$

15. $y = \tan^{-1} x$

Find the exact value using radicals or radians when necessary

14. $\sin\left(\cos^{-1}\left(\frac{2}{3}\right)\right)$

15 $\sin\left(\tan^{-1}(-5)\right)$

16. $\sin^{-1}\left(\cos(0)\right)$

17. $\cos\left(\arcsin\left(-\frac{10}{7}\right)\right)$

18. $\sin^{-1}\left(\cos\left(\frac{5\pi}{6}\right)\right)$

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

20. $\tan^{-1}\left(\cos(\pi)\right)$

21. $\tan\left(\cos^{-1}(0)\right)$

22. $\tan\left(arc\csc\left(-\frac{10}{3}\right)\right)$

Write as an algebraic expression

23. $\tan\left(\arcsin(2x)\right)$

24. $\cos\left(\csc^{-1} x\right)$

25. $\sin\left(\tan^{-1}\frac{x}{4}\right)$

For each of the following functions use **algebraic** methods to find the general solutions for the given value of $f(x)$ Round to three decimal places. These are the only questions with calculator allowed.

26. $y = 5 + 4\sin\frac{\pi}{12}(x+10)$

$f(x) = 7$

27. $y = 1 + 3\cos\frac{\pi}{8}(x+7)$

$f(x) = 2$