Trig worksheet #1 (The Unit Circle) Name: _____

Part II: Evaluate using the unit circle. Show work when appropriate on notebook paper. No decimals.

1. $\cos \frac{11\pi}{6}$ $\frac{\sqrt{3}}{2}$

2. $\sin \frac{\pi}{4}$ $\frac{\sqrt{2}}{2}$

3. $\cos \frac{3\pi}{4}$ $\frac{-\sqrt{2}}{2}$

4. $\tan 2\pi$ 0 $\frac{0}{1}$

5. $\sin \pi$ 0

6. $\tan \pi$ 0 $\frac{0}{-1}$

7. $\sin \frac{7\pi}{6}$ $-\frac{1}{2}$

8. $\cos \frac{5\pi}{4}$ $-\frac{\sqrt{2}}{2}$

9. $\tan \frac{\pi}{4}$ 1 $\frac{\sqrt{2}/2}{\sqrt{2}/2} = 1$

10. $\cos \frac{\pi}{2}$ 0

11. $\sin \frac{4\pi}{3}$ $-\frac{\sqrt{3}}{2}$

12. $\csc \frac{5\pi}{6}$ 2 $\sin \frac{5\pi}{6} \cdot \frac{1}{2}$

13. $\cos \frac{9\pi}{4}$ $\frac{\sqrt{2}}{2}$ $\cos \frac{\pi}{4}$

14. $\sec \frac{2\pi}{3}$ -2 $\cos \frac{2\pi}{3} = \frac{-1}{2}$

15. $\tan \frac{-4\pi}{3}$ $-\sqrt{3}$ $\tan \frac{2\pi}{3} = \frac{\sqrt{3}/2}{-1/2} = \frac{\sqrt{3}}{2} \cdot \frac{-2}{1} = -\sqrt{3}$

16. $\cot 4\pi$ und. $\frac{1}{0}$

17. $\csc \frac{-3\pi}{2}$ 1 $\sin \frac{\pi}{2} = 1$ $\csc \frac{\pi}{2} = 1$

18. $\sin \frac{13\pi}{6}$ $1/2$ — $\sin \frac{\pi}{6}$

19. $\sec \frac{5\pi}{4}$ $-\sqrt{2}$ $\cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$ $\sec \frac{5\pi}{4} = -\frac{2}{\sqrt{2}} = -\frac{2\sqrt{2}}{2} = -\sqrt{2}$

20. $\cot \frac{3\pi}{2}$ 0 $\frac{0}{-1}$

21. $\csc \frac{7\pi}{3}$ $\frac{2\sqrt{3}}{3}$ $\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$ $\csc \frac{\pi}{3} = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

22. $\tan 3\pi$ 0 $\frac{0}{-1}$

23. $\sec \frac{-3\pi}{4}$ $-\sqrt{2}$ $\cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$ $\sec \frac{5\pi}{4} = \frac{2}{-\sqrt{2}} = -\frac{2\sqrt{2}}{2} = -\sqrt{2}$

24. $\cos \frac{8\pi}{3}$ $-1/2$ $\cos\left(\frac{2\pi}{3}\right)$

25. $\sin \frac{-4\pi}{3}$ $\frac{\sqrt{3}}{2}$
$\sin(2\frac{\pi}{3})$

26. $\cot \frac{\pi}{6}$ $\sqrt{3}$
$\frac{\sqrt{3}/2}{1/2} = \frac{\sqrt{3}}{2} \cdot \frac{2}{1} = \sqrt{3}$

27. $\csc 7\pi$ und.
$\sin \pi = 0$
$\csc \pi = \frac{1}{0} =$ und.

28. $\tan \frac{-\pi}{2}$ und.
$\tan(\frac{3\pi}{2})$
$\frac{-1}{0}$

29. $\sin \frac{15\pi}{4}$ $-\frac{\sqrt{2}}{2}$
$\sin \frac{7\pi}{4}$

30. $\sec -\frac{\pi}{4}$ $\sqrt{2}$
$\cos(\frac{7\pi}{4}) = \frac{\sqrt{2}}{2}$ $\sec(\frac{7\pi}{4}) = \frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2}$

31. $\cos 5\pi$ -1
$\cos \pi$

32. $\cot \frac{-7\pi}{6}$ $-\sqrt{3}$
$\cot \frac{5\pi}{6} = \frac{-\sqrt{3}/2}{1/2} = -\frac{\sqrt{3}}{2} \cdot \frac{2}{1}$

33. $\tan \frac{-\pi}{3}$ $-\sqrt{3}$
$\tan \frac{5\pi}{3} = \frac{-\sqrt{3}/2}{1/2} = -\frac{\sqrt{3}}{2} \cdot \frac{2}{1}$

34. $\csc \frac{11\pi}{6}$ -2
$\sin \frac{11\pi}{6} = -\frac{1}{2}$

35. $\tan \frac{-3\pi}{2}$ und.
$\tan \frac{\pi}{2} = \frac{1}{0}$

36. $\sec \frac{\pi}{6}$ $\frac{2\sqrt{3}}{3}$
$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$ $\sec \frac{\pi}{6} = \frac{2}{\sqrt{3}} = \frac{2\sqrt{3}}{3}$

37. $\sin \frac{\pi}{2}$ 1

38. $\cos \frac{13\pi}{3}$ $1/2$
$\cos(\frac{\pi}{3})$

39. $\cot \frac{-\pi}{6}$ $-\sqrt{3}$
$\cot(\frac{11\pi}{6}) = \frac{\sqrt{3}/2}{-1/2} = \frac{\sqrt{3}}{2} \cdot \frac{-2}{1} = -\sqrt{3}$

40. $\tan \frac{4\pi}{3}$ $\sqrt{3}$
$\frac{-\sqrt{3}/2}{-1/2} = -\frac{\sqrt{3}}{2} \cdot \frac{-2}{1}$

41. $\csc \frac{17\pi}{6}$ 2
$\sin \frac{5\pi}{6} = \frac{1}{2}$

42. $\sin 11\pi$ 0
$\sin \pi$

43. $\cos \frac{-2\pi}{3}$ $-1/2$
$\cos(\frac{4\pi}{3})$

44. $\sin \frac{-5\pi}{3}$ $\sqrt{3}/2$
$\sin(\frac{\pi}{3})$

45. $\tan \frac{10\pi}{3}$ $\sqrt{3}$
$\tan \frac{4\pi}{3} = \frac{-\sqrt{3}/2}{-1/2} = -\frac{\sqrt{3}}{2} \cdot \frac{-2}{1}$