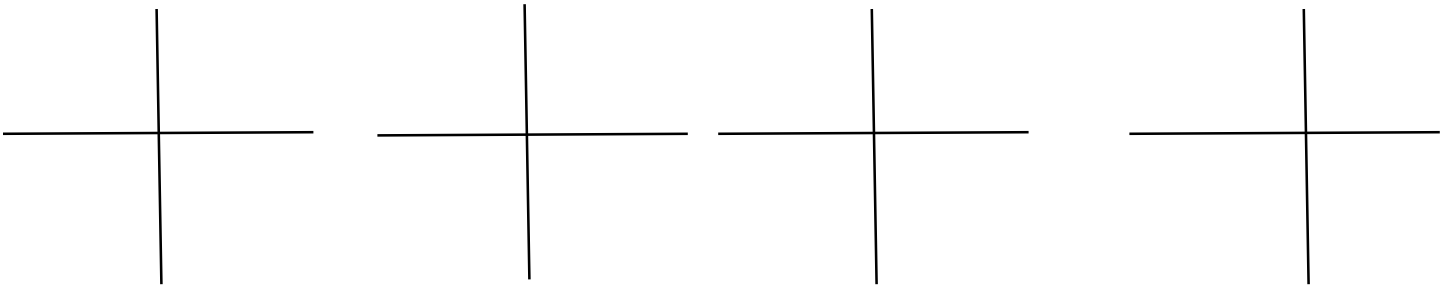
TRIG WORKSHEET—ANGLES **NAME** _____

I. Sketch each of the following angles in standard position.

1. 150^o 2. -120^o 3. $-\frac{7\pi}{4}$ 4. $\frac{2\pi}{3}$



II. Determine the quadrant in which the terminal side of the angle lies.

5. 130^o _____ 6. -336^o _____ 7. 285^o _____

8. -260^o _____ 9. $\frac{22\pi}{3}$ _____ 10. $\frac{7\pi}{5}$ _____

11. $-\frac{17\pi}{3}$ _____ 12. $-\frac{\pi}{12}$ _____ 13. 3.5 _____

14. -1 _____

III. Give 2 coterminal angles, one positive and one negative for each of the following.

15. 34^o _____ _____ 16. -45^o _____ _____

17. -120^o _____ _____ 18. $420°$ _____ _____

19. $\frac{4\pi}{3}$ _____ _____ 20. $\frac{11\pi}{6}$ _____ _____

21. $-\frac{7\pi}{6}$ _____ _____ 22. $\frac{-11\pi}{4}$ _____ _____

IV. Express each of the following in radian measure. Leave your answer in terms of π.

23. 150^o _____ 24. 315^o _____ 25. -240^o _____

26. 115^o _____ 27. 345^o _____ 28. -216^o _____

V. Express each of the following in degree measure.

29. $\frac{5\pi}{9}$ _____ 30. $-\frac{7\pi}{12}$ _____ 31. $\frac{11\pi}{5}$ _____

VI. Find the angle in radian measure **between 0 and 2π** which is coterminal with the following.

32. $\frac{11\pi}{4}$ _____ 33. $\frac{23\pi}{4}$ _____ 34. $\frac{31\pi}{6}$ _____

35. $\frac{40\pi}{3}$ _____ 36. $-\frac{19\pi}{3}$ _____ 37. 121π _____

38. $\frac{62\pi}{5}$ _____

VII. Find the reference angle for each of the following.

39. 208^0 _____ 40. $\frac{7\pi}{4}$ _____ 41. $\frac{14\pi}{5}$ _____

42. -292^0 _____ 43. $-\frac{5\pi}{3}$ _____ 44. -445^0 _____

45. $\frac{13\pi}{9}$ _____ 46. 517^0 _____ 47. -165^0 _____

48. $\frac{17\pi}{6}$ _____ 49. 322^0 _____ 50. $-\frac{12\pi}{7}$ _____