

Precalculus  
Problem Set 5

Name: \_\_\_\_\_

Evaluate each expression without using a calculator.

1.  $\sin 300^\circ =$  \_\_\_\_\_

2.  $\cos(-495^\circ) =$  \_\_\_\_\_

3.  $\tan(-330^\circ) =$  \_\_\_\_\_

4.  $\sec\left(\frac{\pi}{4}\right) =$  \_\_\_\_\_

5.  $\csc\left(-\frac{\pi}{2}\right) =$  \_\_\_\_\_

6.  $\cot\left(\frac{10\pi}{3}\right) =$  \_\_\_\_\_

7.  $\sin\left(-\frac{20\pi}{3}\right) =$  \_\_\_\_\_

8.  $\cos 315^\circ =$  \_\_\_\_\_

9.  $\tan(-315^\circ) =$  \_\_\_\_\_

10.  $\csc\left(-\frac{11\pi}{6}\right) =$  \_\_\_\_\_

11.  $\sec\left(-\frac{\pi}{3}\right) =$  \_\_\_\_\_

12.  $\cot(-150^\circ) =$  \_\_\_\_\_

13.  $\sin\left(\frac{7\pi}{6}\right) =$  \_\_\_\_\_

14.  $\cos(120^\circ) =$  \_\_\_\_\_

15.  $\tan\left(-\frac{3\pi}{4}\right) =$  \_\_\_\_\_

16.  $\sec\left(\frac{4\pi}{3}\right) =$  \_\_\_\_\_

17.  $\csc(240^\circ) =$  \_\_\_\_\_

18.  $\cot(540^\circ) =$  \_\_\_\_\_

Give answers in radians.

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

20.  $\cos^{-1}\left(\frac{1}{2}\right) =$  \_\_\_\_\_

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

22.  $\operatorname{arcsec}\left(-\frac{2\sqrt{3}}{3}\right) =$  \_\_\_\_\_

23.  $\operatorname{arccsc}(-\sqrt{2}) =$  \_\_\_\_\_

24.  $\arctan(1) =$  \_\_\_\_\_

25.  $\arcsin\left(-\frac{1}{2}\right) =$  \_\_\_\_\_

26.  $\operatorname{arcsec} -2 =$  \_\_\_\_\_

27.  $\arctan\left(-\frac{\sqrt{3}}{3}\right) =$  \_\_\_\_\_

28.  $\cos^{-1}\left(-\frac{\sqrt{3}}{2}\right) =$  \_\_\_\_\_

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

30.  $\cot^{-1}(-1) =$  \_\_\_\_\_

31.  $\sin^{-1} 0 =$  \_\_\_\_\_

32.  $\arccos(1) =$  \_\_\_\_\_

33.  $\tan^{-1}(-\sqrt{3}) =$  \_\_\_\_\_

34.  $\arcsin(1) =$  \_\_\_\_\_

35.  $\arccos(-1) =$  \_\_\_\_\_

36.  $\tan^{-1} 0 =$  \_\_\_\_\_

Find the exact value without the calculator. Circle your final answer!

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

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

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

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

42.  $\sin^{-1}\left(\sin\left(\frac{7\pi}{4}\right)\right)$

43.  $\arccos\left(\sin\left(\frac{\pi}{3}\right)\right)$

44.  $\sin(\tan^{-1}(\sqrt{3}))$

45.  $\cos(\tan^{-1}(-1))$

46.  $\tan\left(\arccos\left(\frac{x}{3}\right)\right)$

47. If the point  $(-8, 15)$  lies on the terminal side of  $\theta$ , find  $\sec \theta$ .

48. If  $\sec \theta = -\frac{9}{4}$  and  $\tan \theta > 0$ , find  $\cot \theta$ .

Find two solutions of the equation. Give answers in degrees ( $0^\circ \leq \theta \leq 360^\circ$ ).

49.  $\csc \theta = -1.24$

50.  $\sec \theta = -2.45$