Pre–Calculus AB (NO CALCULATOR) **Name**_____
Review Chapter 6.4–6.5 **Period**_____

Complete the following questions:

1) The radius of the unit circle is _____ and the center is at _____.
2) A positive angle measure indicates the angle opens in a _____ direction and a negative angle measure indicates the angle opens in a _____ direction.
3) In an ordered pair, the *x*-coordinate is the _____ of the angle, and the *y*–coordinate is the _____ of the angle.
4) In which quadrant(s) would the sin be negative?_____
5) In which quadrant(s) would the cos be negative?_____
6) In which quadrant(s) would the tan be positive?_____
7) In which quadrant(s) would the sec be negative?_____
8) In which quadrant(s) would the cot be negative?_____

Find the reference angle

9) $\frac{5\pi}{3}$ 10) $\frac{7\pi}{6}$ 11) $\frac{3\pi}{4}$ 12) –240° 13) 150°

14) –330° 15) –120° 16) $\frac{23\pi}{6}$ 17) $\frac{15\pi}{4}$

Find the exact value without using a calculator

18) sin $\frac{5\pi}{4}$ =_____ 19) cos $\frac{11\pi}{6}$ =_____ 20) sin $\frac{16\pi}{3}$ =_____ 21) sec (–30°) = _____ 21) csc 225° = _____

22) cot 315° = _____ 23) tan $\frac{\pi}{4}$ = _____ 24) tan π = _____ 25) cot $\frac{4\pi}{3}$ = _____ 26) sec $(-\frac{\pi}{4})$= _____

27) tan $-\frac{5\pi}{4}$ =_____ 28) sin $(-\frac{7\pi}{6})$ = _____ 29) cos $\frac{11\pi}{6}$ = _____30) tan 2π =_____ 31) tan $\frac{3\pi}{4}$ = _____

32) csc= $\frac{2\pi}{3}$ _____ 33) sec (–720°) = _____ 34) cot (– 90°) = _____ 35) sin 450° = _____ 36) cos $\frac{13\pi}{6}$ = _____

Find the exact value (means NO DECIMALS) for the following angles

37) $\sin\frac{19\pi}{6}$ 38) $\tan\frac{9\pi}{4}$ 39) $\cos\left(-\frac{4\pi}{3}\right)$ 40) $\csc\frac{\pi}{2}$

41) $\sec\left(-\frac{17\pi}{6}\right)$ 42) $\cot\left(-\frac{23\pi}{6}\right)$ 43) $\tan\frac{14\pi}{3}$ 44) $\sin\left(-\frac{10\pi}{3}\right)$

Find the exact value of the following when the terminal side of angle θ passes through the given point:

45) $(-3,-4)$

$\sin\theta =$

$\cos\theta =$

$\tan\theta =$

46) $(6,-9)$

$\sin\theta =$

$\cos\theta =$

$\tan\theta =$

47) $\left(-\sqrt{7},-8\right)$

$\sin\theta =$

$\cos\theta =$

$\tan\theta =$

Simplify.

48) $\sec x\cos x$

49) $\tan^2 x-\sec^2 x$

50) $\dfrac{1-\cos^2 x}{\sin x}$

51) $\cot x\sec x$

52) $\cos^2 x\left(\sec^2 x-1\right)$

53) $\dfrac{\sec^2 x-1}{\sin^2 x}$

54) $\sin x+\cot x\cos x$

55) $\dfrac{\cot x}{\tan x}$

56) $\dfrac{\cos^2 t-\cos^2 t\sin^2 t}{\cos^2 t}$

Use the Pythagorean identities to find sin t for the given cos t.

57) $\cos t=-0.5,\quad \pi<t<\dfrac{3\pi}{2}$

58) $\cos t=-\dfrac{2}{\sqrt{7}},\quad \dfrac{\pi}{2}<t<\pi$