QUIZ FRIDAY

Label unit circle with radian values AND coordinates, then answer questions regarding all 6 trig functions.

30 points

No calculator!

Part 1 written (10 points)

Label unit circle with radian values AND coordinates.

Part 2 online (20 points)

Answer questions regarding all 6 trig functions. Two attempts per problem will be allowed.

30 total points

No calculator!

TODAY'S ASSIGNMENT #1-50…NO CALCULATOR!

CHAPTER 5: UNIT CIRCLE

NO Calculator!

#27-50 Show all steps!!

NAME:

1) The value of $\sin \frac{4\pi}{3}$ is

2) Find the exact value of $\sin \frac{13\pi}{6}$.

3) Find the exact value of $\cos (-\frac{\pi}{4})$.

4) Find the exact value of $\sin (-\frac{2\pi}{3})$.

5) Find the exact value of $\tan (-\frac{5\pi}{4})$.

*6) The value of $\sin \frac{3\pi}{2} + \cos \frac{2\pi}{3}$ is

*Show work!

*7) The numerical value of $\sin \frac{3\pi}{2} + \cos \frac{\pi}{4}$ is

*8) The value of $\sin \frac{\pi}{6} + \tan \frac{\pi}{4}$ is

*9) What is the value of $\tan \frac{\pi}{3} + \cos \pi$?

*10) The value of $\cos \frac{\pi}{3} - \sin \frac{3\pi}{2}$ is

27) At $x = \frac{\pi}{2}$, the difference $2 \sin x - \cos (2x)$ is

28) If $g(x) = \tan (x - \frac{\pi}{2})$, the value of $g(\pi)$ is

29) If $f(x) = \cos \frac{x}{3} + \sin x$, then $f(\pi)$ equals

30) If $f(x) = \sin^2 x$, then $f(\frac{\pi}{2})$ equals

31) If $f(x) = \sin \frac{x}{4}$, then $f(\pi)$ equals

32) If $f(x) = 4 \cos 3x$, what is the value of $f(\frac{\pi}{4})$?

33) If $f(x) = \cos 3x + \sin x$, then $f(\frac{\pi}{2})$ equals

34) Evaluate: $\sec 0 + \csc \frac{\pi}{2}$

35) Evaluate: $\csc \frac{3\pi}{2} - \sec \pi$

36) Evaluate: $\cot \frac{\pi}{2} \tan \pi$

11) For which value of θ is the expression $\frac{2}{\tan\theta - 1}$ undefined?

12) For which value of θ is the fraction $\frac{1}{\cos\theta}$ undefined?

13) Evaluate: (2 Arc tan 1)

14) The value of Arc sin (-1) is

15) The value of 2(Arc sin 1) is

use principal values #11-26

16) If θ = Arc cos $(\frac{\sqrt{2}}{2})$, what is the value of tan θ?

17) The value of cos (Arc tan $\sqrt{3}$) is

18) The value of sin (Arc cos 1) is

19) What is the value of sin (Arc cos $\frac{1}{2}$)?

20) The value of tan (Arc sin $\frac{\sqrt{3}}{2}$) is

Show both steps!

21) Evaluate: cos (Arc sin $\frac{\sqrt{3}}{2}$)

22) Evaluate: cos (Arc sin (-1))

23) Evaluate: cos (Arc tan [-1])

24) Find the value of the expression, Arc sin (tan $[-\frac{\pi}{4}]$), in radians.

25) Find the value of the expression, Arc cos (sin $-\frac{\pi}{3}$), in radians.

26) Find the value of the expression, Arc tan (sin $\frac{3\pi}{2}$), in radians.

37) Evaluate: $\sec^2\pi - 2\cot\frac{\pi}{2}$

38) Evaluate: $\sin^2\frac{\pi}{3} - \tan\frac{\pi}{4}$

39) Evaluate: $2\cos\frac{\pi}{3}\tan\frac{\pi}{6}$

40) Evaluate: $\csc\frac{\pi}{6} - \sec\frac{\pi}{3}$

41) Evaluate: $\cot\frac{\pi}{3}\sin\frac{\pi}{3}$

42) Evaluate: $2\tan\frac{\pi}{4} + \sin\frac{\pi}{2}$

43) Evaluate: $(3\tan\frac{\pi}{6} - \cos\frac{3\pi}{2}) \div (\cot\frac{\pi}{4})$

44) Evaluate: $\dfrac{\csc\frac{3\pi}{2}\tan\frac{\pi}{3}}{\sec^2\frac{\pi}{3}}$

45) Evaluate: sin (Arc cos $[-\frac{\sqrt{3}}{2}]$)

46) Evaluate: tan (Arc sin $[-\frac{1}{2}]$)

47) Evaluate: sin (2 Arc cos $[-\frac{\sqrt{3}}{2}]$)

48) Evaluate: cos (2 Arc tan $[\sqrt{3}]$)

principal values.

49) Find the value of the expression, Arc cos (sin $\frac{\pi}{3}$), in radians.

50) Find the value of the expression, Arc sin (tan $\frac{\pi}{4}$), in radians.

Hint for #40: To solve $\csc\frac{\pi}{6}$ you will first need to evaluate $\sin\frac{\pi}{6}$, then use the reciprocal.

Hint for #30: $\sin^2 x = (\sin x)^2$

Important: use principal values for #11-26 and #45-50

Reminders from previous notes:

Principal values create a unique (one) solution:

Sinθ and Tanθ → Quadrant I (+)

Quadrant IV (-)

$$-\frac{\pi}{2} \le \theta \le \frac{\pi}{2}$$

Cosθ → Quadrant I (+)

Quadrant II (-)

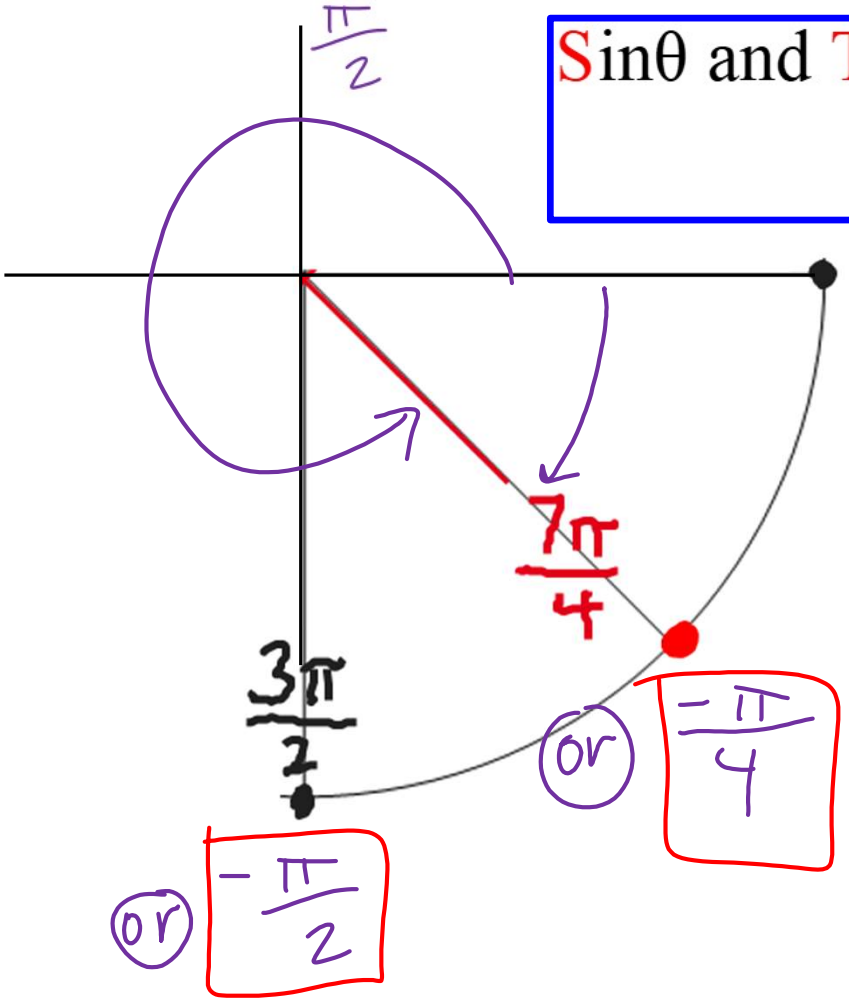
$$0 \le \theta \le \pi$$

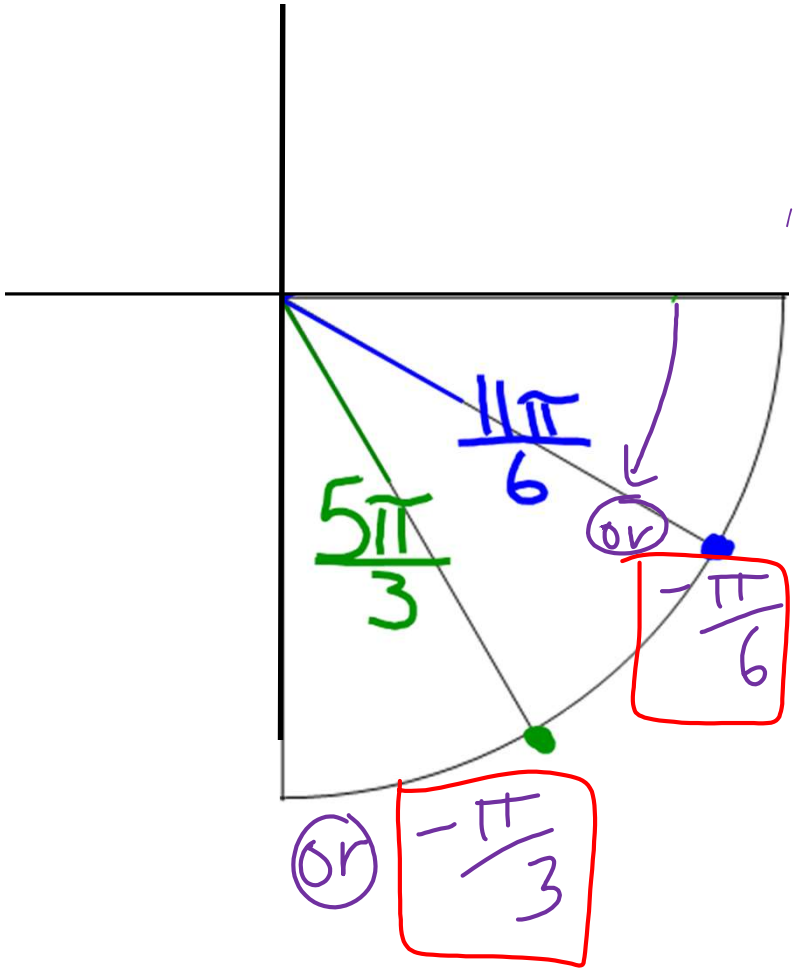
↑ **UPPER CASE** letters are often used to indicate principal values *(domain and range restrictions)*

Sinθ and Tanθ → Quadrant I (+)

Quadrant IV (-)

$$-\frac{\pi}{2} \le \theta \le \frac{\pi}{2}$$





Reminder: alternative inverse notation

$\arcsin\frac{1}{2}$ has the same meaning as $\sin^{-1}\frac{1}{2}$

IMPORTANT! Both can be rewritten as: $\sin\theta = \frac{1}{2}$

$\arccos\frac{\sqrt{2}}{2}$ has the same meaning as $\cos^{-1}\frac{\sqrt{2}}{2}$

$\arctan\sqrt{3}$ has the same meaning as $\tan^{-1}\sqrt{3}$