Chapter 3.1-3.3 Practice Test

Trigonometry | Mr. Cooper

Name _____
Date _____
Period _____
Grade _____

This portion of the test is to be completed without a calculator.

For the following, give the exact value of the following in simplest radical form.

1) $\csc\left(\frac{-7\pi}{6}\right) =$ $\frac{1}{\sin\left(\frac{-7\pi}{6}\right)} = \frac{1}{\frac{1}{2}} = 2$ $\sin\frac{\pi}{6}$

2) $\sin\left(\frac{17\pi}{4}\right) =$ $\frac{\sqrt{2}}{2}$

3) $\cot(-450^o) =$ $\cot(-90^\circ) = \frac{0}{-1} = 0$ $\hat{\theta} = 90^\circ$

4) $\sec(210^o) =$ $\frac{1}{\cos 210^\circ} = \frac{1}{-\frac{\sqrt{3}}{2}} = -\frac{2}{\sqrt{3}}$

5) $\csc(150^o) =$ $\frac{1}{\sin 150} = \frac{1}{\frac{1}{2}} = 2$

6) $\sec\left(-\frac{19\pi}{2}\right) =$ $\frac{1}{\cos\left(-\frac{19\pi}{2}\right)} = \frac{1}{0} =$ ~~Undefined~~ Undefined $\cos\left(\frac{\pi}{2}\right)$

7) $\csc\frac{5\pi}{6} =$ $\frac{1}{\sin\frac{5\pi}{6}} = \frac{1}{\frac{1}{2}} = 2$

8) $\sin\left(\frac{13\pi}{6}\right) =$ $\frac{1}{2}$

9) $\tan(300^\circ) =$ $\tan(-60^\circ) = -\frac{\sqrt{3}}{1}$ $\hat{\theta} = 60$

10) $\cos\left(\frac{-13\pi}{4}\right) =$ $-\frac{\sqrt{2}}{2}$

11) $\sec(450^\circ) =$ $\frac{1}{\cos 90^\circ} = \frac{1}{0} =$ Undefined

12) $\tan(5\pi) =$ 0

13) $\csc(390^\circ) =$ $\frac{1}{\sin 30^\circ} = \frac{1}{\frac{1}{2}} = 2$

14) $\sin(3\pi) =$ 0 $\sin\pi$

15) $\tan(315^\circ) =$ -1

16) $\sec(-300^\circ) =$ $\frac{1}{\cos(60)} = \frac{1}{\frac{1}{2}} = 2$

17) $2\cos\frac{2\pi}{3} =$ $2\left(-\frac{1}{2}\right) = -1$

18) $2\cos\left(3x - \frac{\pi}{2}\right)$ when $x = \frac{\pi}{3} =$ 0

$2\cos\left(\cancel{3}\left(\frac{\pi}{\cancel{3}}\right) - \frac{\pi}{2}\right) =$

$2\cos\left(\frac{2\pi}{2} - \frac{\pi}{2}\right) =$

$2\cos\left(\frac{\pi}{2}\right) =$

$2(0) = 0$

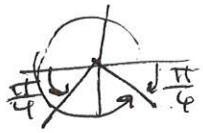
$\frac{3\pi}{3}$ $\frac{3}{3} \cdot \frac{\pi}{1}$

Find the angle measure in radians (leave in terms of π) for all angles θ in $0 \le \theta < 2\pi$.

19) $\cos\theta = \frac{\sqrt{3}}{2}$; $\frac{\pi}{6}, \frac{11\pi}{6}$

20) $\sin\theta = \left(-\frac{\sqrt{2}}{2}\right)$; $\frac{5\pi}{4}$ $\frac{7\pi}{4}$

$\hat{\theta} = \frac{\pi}{4}$



21) $\sin\theta = \frac{-\sqrt{3}}{2}$; $\frac{4\pi}{3}, \frac{5\pi}{3}$

$\hat{\theta} = 60 = \frac{\pi}{3}$

22) $\cos\theta = \left(-\frac{1}{2}\right)$; $\frac{2\pi}{3}, \frac{4\pi}{3}$

23) $\sin(\theta) = \frac{1}{2}$; $\frac{\pi}{6}$ $\frac{5\pi}{6}$

24) $\cos(\theta) = 0$; _____

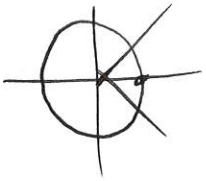
25) $\tan(\theta) = \frac{-\sqrt{3}}{3}$; $\frac{5\pi}{6}$ $\frac{11\pi}{6}$

$\frac{\pi}{6}$

$-\frac{1}{\sqrt{3}}$ $\sin\theta$ $\frac{1}{2}$ $\cos\theta$ $\frac{\sqrt{3}}{2}$

26) $\cot(\theta) = Undefined$; _____

PART B Calculator OKAY



Ture or False.

27) Tangent is an even function. False

28) An odd function is defined as $f(-x) = f(x)$. False

29) An even function is define as $f(x) = f(-x)$. True

30) $[\sin(-\theta)]\sec(-\theta)[\cot(-\theta)] = 1$. True

$[\cancel{(-1)}(\sin\theta)](\sec\theta)[\cancel{(-1)}(\cot\theta)] = (\cancel{\sin\theta})\left(\frac{1}{\cancel{\cos\theta}}\right)\left(\frac{\cancel{\cos\theta}}{\cancel{\sin\theta}}\right) = 1$

Fill in the blank.

31) The number of radians in two revolutions is 4π.

32) The tangent and cosine functions are both negative in the II quadrant.

II IV II III

33) Convert 470° to radians. $\frac{47\pi}{18}$

$47\cancel{0}^\circ\left(\frac{\pi}{18\cancel{0}}\right) = \frac{47\pi}{18}$

$\theta = 327$

34) Convert $\frac{3\pi}{5}$ radians to degrees. 108°

$\frac{3\cancel{\pi}}{5}\left(\frac{180^\circ}{\cancel{\pi}}\right)$

35) Convert 4.3 radians to degrees. 246.372°

$4.3\left(\frac{180}{\pi}\right)$

36) Convert -160° to radians _____

37) Convert $\frac{7\pi}{12}$ *radians* to degrees 105°

$\frac{7\cancel{\pi}}{12}\ \frac{180}{\cancel{\pi}}$

38) Convert -16.125 radians to degrees -923.894°

$-16.125\left(\frac{180^\circ}{\pi}\right)$

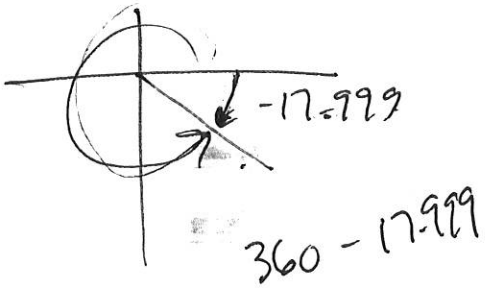
39) Convert 720° to radians. _____

Use a calculator to find θ if θ is between 0 and 360° and...

40) $\sin\theta = -.3090$ *with θ in QIV*

$\hat{\theta} = +17.999$

$\boxed{\theta = 342.001^\circ}$



360 - 17.999

41) $\cos\theta = -.2644$ *with θ in QII*

$\theta = \cos^{-1}(-.2644)$

$\boxed{\theta = 105.331}$