Honors Precalculus '16 Name _____
Trig Basics
Part II--CALCULATOR ALLOWED

1. If $\cos 67° = \tan x$, then $x =$

a. 0.4 b. 6.8 c. 21.3 d. 29.3 e. 7.8

2. Which of the following is a unit vector?

a. $0\vec{i} + 0\vec{j}$ b. $\vec{i} - \vec{j}$ c. $\vec{i} + \vec{j}$

d. $\vec{v} = \frac{1}{3}\vec{i} - \frac{2}{3}\vec{j}$ e. $\frac{4}{5}\vec{i} + \frac{3}{5}\vec{j}$

3. Two legs of a right triangle have lengths 15 and 8. The measure of the smaller acute angle is

a. 61.9° b. 32.2° c. 28.1°

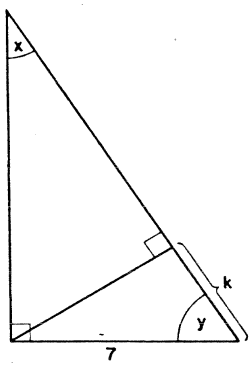
d. 17° e. none of these

4. If $f(x,y) = \sin x - \tan y$ and $g(x,y) = 1 + \sin x \cdot \cos y$, then, in <u>radians</u>, $\frac{g(2,1)}{f(2,1)} =$

a. 59.325 b. -0.434 c. 0.017

d. 0.215 e. -2.30

5. In the figure below, $\sin y =$



a. $\frac{7}{k}$ b. $\frac{k}{7}$ c. $\frac{7-k}{7}$ d. $\frac{\sqrt{49-k^2}}{7}$ e. $\frac{\sqrt{49-k^2}}{k}$

6. An incline makes an angle of $30°$ with level ground. How many feet up the incline must one go in order to rise 12 feet above the ground?

a. 6 b. 12 c. $12\sqrt{3}$ d. 24 e. $24\sqrt{3}$

7. What is the measure of an angle whose sine is twice the cosine of $90°$?

a. $30°$ b. $60°$ c. $90°$

d. $120°$ e. None of these

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Trig Basics
Part III--CALCULATOR ALLOWED
Round answers to three decimals.

1. $(-3, -7)$ is on the terminal side of A. Find the six **exact** trig values:

$\sin A =$ $\csc A =$

$\cos A =$ $\sec A =$

$\tan A =$ $\cot A =$=

2. If $\sec B = 25/7$ in QIV, find the other five **exact** trig values:

$\sin B =$ $\csc B =$

$\cos B =$ $\sec B = 25/7$

$\tan B =$ $\cot B =$=

3. What are the approximate values, in degrees of A and B (from #1and #2)?

$A =$ _____

$B =$ _____

4. (a) Find the approximate values of:

Cos .365= Sin 68°= Tan 1.95=

4. (b) Find the approximate values (in degrees) of:

$\cos^{-1}(-.639)=$ $\sin^{-1}(3.72)=$

$\tan^{-1}(4.73)=$ $\csc^{-1}(8.362)=$

5. A boat sales 55 mph at a bearing of 285˚. The current flows 7 mph at 212˚. Find the magnitude and bearing of the resultant vector.

6. Identify the quadrant and reference angle of :

a. 601° Q_____ θ_{ref} = _____

b. –440° Q_____ θ_{ref} = _____

c. 14563° Q_____ θ_{ref} = _____

d. –792° Q_____ θ_{ref} = _____

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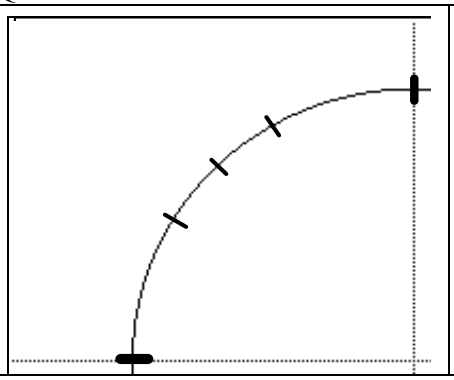
Trig Basics
Part I
NO CALCULATOR ALLOWED

Round to 3 decimal places. Show all work.
Multiple Choice (3 pts. each)

1. Fill in the coordinates from QII of the Unit Circle and the Table Values from QI.



Radians	Degree	Cos	Sin
	0		
	30		
	45		
	60		
	90		

2. Find the exact value of the following:

(a) $\tan^2 \frac{4\pi}{3} - \sec^2 \frac{5\pi}{4}$

(b) $\csc \frac{5\pi}{6} \tan \frac{3\pi}{4} \cos \frac{2\pi}{3}$

(c) $\sec \frac{\pi}{6} \tan \frac{\pi}{3} + \cot \frac{\pi}{3} \csc \frac{\pi}{6}$