Honors Precalculus '12 Name
Trig Basics
CALCULATOR ALLOWED

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

1. $\sec\left(\sin^{-1}\frac{\sqrt{5}}{5}\right)=$

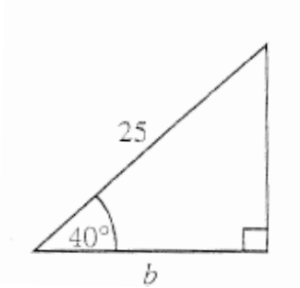
a. 2.15 b. 1.12 c. 0.89 d. 0.98 e. 1.10

2. Suppose $\vec{v}=\sqrt{7}\vec{i}-6\vec{j}$. Find the unit vector in the direction of $\vec{v}$.

a. $\frac{\sqrt{595}}{85}\vec{i}-\frac{6\sqrt{595}}{85}\vec{j}$ b. $\vec{v}=\sqrt{7}\vec{i}-6\vec{j}$ c. $\vec{v}=\frac{\sqrt{7}}{6}\vec{i}-\vec{j}$

d. $\vec{v}=\vec{i}-\frac{6\sqrt{7}}{7}\vec{j}$ e. $\frac{\sqrt{301}}{43}\vec{i}-\frac{6\sqrt{43}}{43}\vec{j}$

3. In the triangle shown, which of the following best approximates *b*?



a. 16.07 b. 19.15 c. 20.98

d. 32.64 e. 38.89

4. If $f(x,y)=\tan x+\tan y$ and $g(x,y)=1-\tan x\cdot\tan y$, then, in radians, $\dfrac{f(1,2)}{g(1,2)}=$

a. 0 b. -0.15 c. 0.58

d. 0.05 e. -0.20

Free Response (5 pts. each)

1. $(17, -2)$ 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 $\csc B=17/6$ in QII, find the other five **exact** trig values:

$\sin B=$ $\csc B=17/6$

$\cos B=$ $\sec B=$

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

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

$A=$ _____

$B=$ _____

4. (a) Find the approximate values of:

cot 42 sin 42° sec42

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

$\sin^{-1}(-1.639)=$ $\sec^{-1}(3.72)=$

$\tan^{-1}(0.43)=$ $\csc^{-1}(1-.362)=$

5. A boat sales 50mph at a bearing of 210˚. The current flows 14mph at 100˚. Find the magnitude and bearing of the resultant vector.

_____

6. Identify the quadrant and reference angle of :

(a) 685˚ _____

(b) -1243˚ _____

(c) -731˚ _____

(d) 734˚ _____

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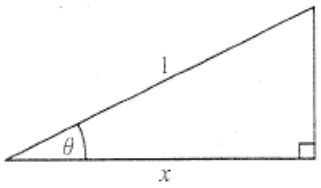
NO CALCULATOR ALLOWED

Round to 3 decimal places. Show all work.

Multiple Choice (3 pts. each)

5. In the figure to the right, $\sin\theta =$



(a) $\sqrt{1-x^2}$

(b) $\sqrt{1+x^2}$

(c) $\sqrt{1-x^2}/x$

(d) $\sqrt{1+x^2}/x$

(e) x

6. An incline makes an angle of $45°$ with level ground. How many feet up the incline must one go in order to rise 10 feet above the ground?

(a) $\frac{\sqrt{2}}{10}$

(b) $\frac{\sqrt{2}}{10}$

(c) 10

(d) $10\sqrt{2}$

(e) 20

7. What is the measure of an angle whose sine is twice the sine of $60°$?

(a) $30°$

(b) $90°$

(c) $120°$

(d) $240°$

(e) No such angle

Free Response (10 pts. each)

7. Find the exact value of the following:

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

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