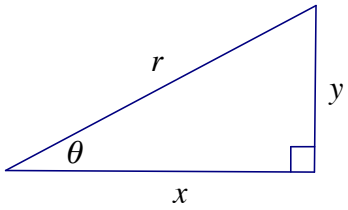
Honors Precalculus '21-22 Name _____
Trig Basics Test
Part I--CALCULATOR ALLOWED

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



a) $\frac{x}{r}$ b) $\frac{y}{r}$ c) $\frac{y^2}{rx}$ d) $\frac{x^2}{ry}$ e) $\frac{xy}{r^2}$

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2. The magnitude of $\vec{v} = \sqrt{7}\vec{i} - \sqrt{6}\vec{j}$ is

a) 1 b) $\sqrt{13}$ c) $\sqrt{55}$ d) $\sqrt{85}$ e) 85

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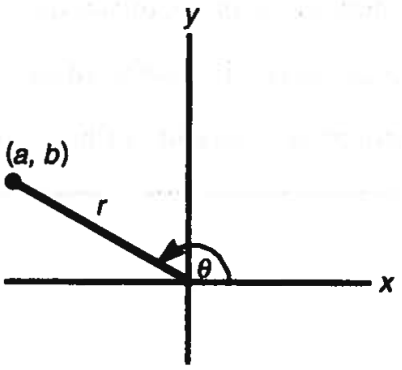
3. In the figure $r\sin\theta$ equals

a) a
b) b
c) $-a$
d) $-b$
e) $a+b$



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4. Simplify the expression $\sin\left(\cos^{-1} 6x\right)$.

a) $\sqrt{1-6x^2}$ b) $\sqrt{1+6x^2}$ c) $\sqrt{36x^2-1}$

d) $\sqrt{1+36x^2}$ e) $\sqrt{1-36x^2}$

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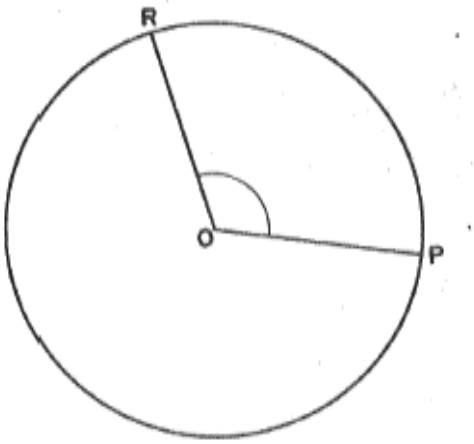
5. In the figure below, Circle *O* has radius 2 and $\overset{\frown}{PR}$ has length 4. What is the radian measure of $\angle POR$?



a) 1 b) 2 c) 4 d) $\frac{1}{\pi}$ e) π

---

6. If the terminal side of α passes through $(-9, 5)$, then $\tan\alpha =$

a) $-\frac{9}{5}$ b) $-\frac{5}{9}$ c) $-\frac{9}{\sqrt{106}}$ d) $\frac{5}{9}$ e) $\frac{9}{5}$

---

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

a) $30°$ b) $60°$ c) $90°$

d) $120°$ e) None of these

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Trig Basics Test
Part II--CALCULATOR ALLOWED

1. $(-4, -7)$ 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 $\tan B = -\frac{7}{24}$ in QII, find the other five exact trig values:

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

$\cos B = -\frac{5}{8}$ $\sec B =$

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

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

$A =$ _____

$B =$ _____

4. (a) Find the approximate values of:

Cos -35=

Sin -206°=

Tan 1.46=

Sec -.546=

Csc 7.26°=

Cot 30 =

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

$\cos^{-1}$ .855=

$\sin^{-1}$ (-.375)=

$\tan^{-1}$ 5.058=

$\sec^{-1}$ -.982=

$\csc^{-1}$ -1.362=

5. A boat sails 37 mph at a bearing of 113°. The current flows 5 mph at 274°. Find the magnitude and bearing of the resultant vector.

6. Identify the quadrant and reference angle of :

a) 585˚ Q_____ θ_{ref} =

b) -472˚ Q_____ θ_{ref} =

c) 2672˚ Q_____ θ_{ref} =

d) -642˚ Q_____ θ_{ref} =

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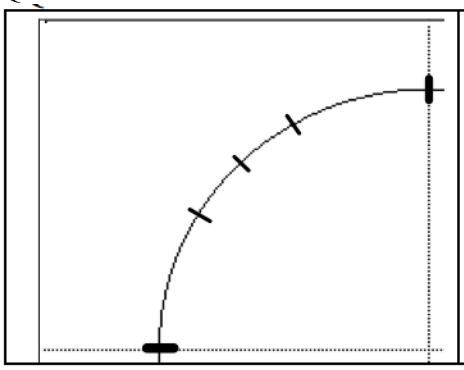
Trig Basics Test
Part III
NO CALCULATOR ALLOWED

Round to 3 decimal places. Show all work

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



Radians	Degree	Cos	Sin
	0		
	30		
	45		
	60		
	90		

2. Find the exact value of the following:

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

(b) $\sin\frac{\pi}{6}\cos\frac{\pi}{3}+\sin\frac{\pi}{3}\cos\frac{\pi}{6}$

(c) $\cos\left(\frac{5\pi}{4}\right)-\sin\left(\frac{\pi}{2}\right)+\tan\left(\frac{13\pi}{6}\right)$