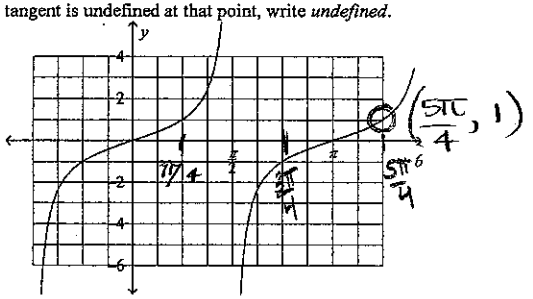
Name: _____ Class: _____ Date: _____ ID: A

Acc. Algebra 2 TRIG TEST (13.6, 13.8, 14.1, 14.2, 14.3) REVIEW

Short Answer

1. Use the graph of $y = \tan x$ to find the value of $y = \tan \frac{5}{4}\pi$. Round to the nearest tenth if necessary. If the tangent is undefined at that point, write *undefined*.



$\tan\frac{5\pi}{4} = 1$

2. Sketch the graph of the tangent curve $y = \tan 3x$ in the interval from 0 to 2π.

3. Use a graphing calculator to graph the function $y = 140 \tan 2x$ on the interval $0° < x < 180°$ and $-300 < y < 300$.
Evaluate the function at $x = 60°, 120°$, and $180°$. Round to the nearest tenth.

mode → deg
y =
table

$-242.5 \quad 242.5 \quad 0$

4. Evaluate sec –50°. Round your answer to the nearest hundredth.

$1.56 \quad \frac{1}{\cos(-50)} =$

5. Suppose $\tan\theta = \frac{14}{19}$. Find $\cot\theta$. $\frac{19}{14}$ reciprocal

6. Find the exact value of csc 135°. If the expression is undefined, write *undefined*.

$\frac{1}{\sin\left(\frac{3\pi}{4}\right)} = \frac{1}{\frac{\sqrt{2}}{2}}$

$\sqrt{2}$

7. Find the exact value of sec (–270°). If the expression is undefined, write *undefined*.

$\frac{1}{\cos(-270)} = \frac{1}{0}$

undefined

8. Find the exact value of cot 45°. If the expression is undefined, write *undefined*.

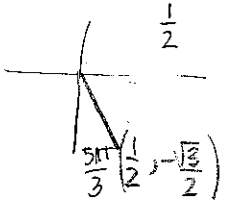
$\frac{1}{\tan 45} = \frac{1}{1}$

1

9. Evaluate $\cot\frac{5\pi}{3}$ to the nearest hundredth. The angle is given in radians.

$\frac{1}{\tan\frac{5\pi}{3}} \quad \frac{1}{\frac{-\sqrt{3}}{2}} = \frac{1}{-\sqrt{3}} = \frac{-\sqrt{3}}{3}$

$\frac{1}{2}$



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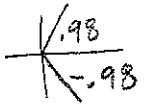
Simplify the trigonometric expression.

10. $\sin\theta\csc\theta$ $\sin\theta \cdot \frac{1}{\sin\theta} = 1$ #(recip.) = 1

Solve the equation for $0 \le \theta < 2\pi$. Write your answer as a multiple of π, if possible.

11. $5\tan\theta = 6 - \tan\theta$ $6\tan\theta = 6$ $\tan\theta = 1 = \pi/4, \frac{5\pi}{4}$

12. $2\sin\theta = 1$ $\sin\theta = \frac{1}{2}$ $\pi/6, 5\pi/6$



13. $2\sin\theta\cos\theta + \cos\theta = 0$

$\cos\theta(2\sin + 1) = 0$

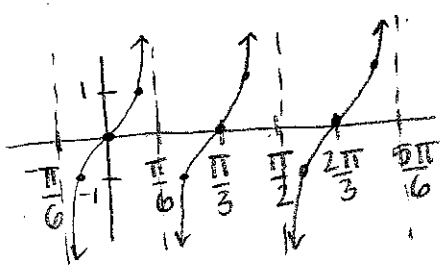
$\cos\theta = 0 \quad \sin\theta = -\frac{1}{2}$

$\frac{\pi}{2}, \frac{3\pi}{2} \quad \frac{7\pi}{6}, \frac{11\pi}{6}$

2. $a = 1$

$p = \frac{\pi}{3}$

half $-\frac{\pi}{6} \quad \frac{\pi}{6}$



Working with the Pythagorean Identities

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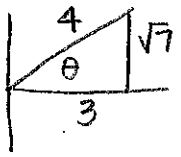
Using the Pythagorean Identities, find the following trigonometric functions.

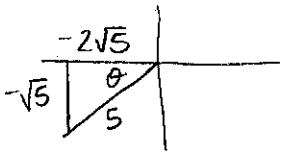
1. Find $\sin\theta$ when $\cos\theta = \frac{3}{4}$ and θ is in quadrant I.



$3^2 + y^2 = 4^2$
$y^2 = 7$
$y = \sqrt{7}$

$\frac{\sqrt{7}}{4}$

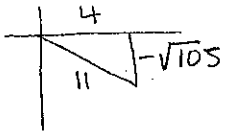
2. Find $\tan\theta$ when $\sin\theta = -\frac{\sqrt{5}}{5}$ and θ is in quadrant III.



$(-\sqrt{5})^2 + x^2 = 5^2$
$x^2 = 20$
$x = 2\sqrt{5}$

$\frac{-\sqrt{5}}{-2\sqrt{5}} = \frac{1}{2}$

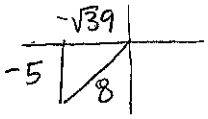
3. Find $\sin\theta$ when $\cos\theta = \frac{4}{11}$ and θ is in quadrant IV.



$4^2 + y^2 = 11^2$
$y^2 = 105$
$y = \sqrt{105}$

$\frac{-\sqrt{105}}{11}$

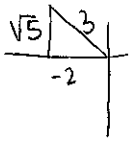
4. Find $\cos\theta$ when $\sin\theta = -\frac{5}{8}$ and θ is in quadrant III.



$(5)^2 + x^2 = 8^2$
$x^2 = 39$

$\frac{-\sqrt{39}}{8}$

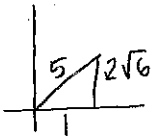
5. Find $\tan\theta$ when $\cos\theta = -\frac{2}{3}$ and θ is in quadrant II.



$2^2 + y^2 = 3^2$
$y^2 = 5$

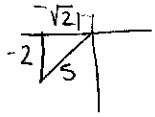
$-\frac{\sqrt{5}}{2}$

6. Find $\sin\theta$ when $\cos\theta = \frac{1}{5}$ and θ is in quadrant I.



$\frac{2\sqrt{6}}{5}$

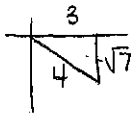
7. Find $\cos\theta$ and $\tan\theta$ when $\sin\theta = -\frac{2}{5}$ and θ is in quadrant III.



$5^2 - 2^2 = x^2$
$\sqrt{21} = x$

$\frac{-\sqrt{21}}{5}$ $\frac{2\sqrt{21}}{21}$

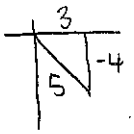
8. Find $\sin\theta$ and $\tan\theta$ when $\sec\theta = \frac{4}{3}$ and θ is in quadrant IV.



(#1)

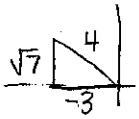
$-\frac{\sqrt{7}}{4}$ $-\frac{\sqrt{7}}{3}$

9. Find $\cos\theta$ and $\cot\theta$ when $\csc\theta = -\frac{5}{4}$ and θ is in quadrant IV.



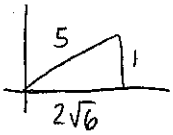
$\frac{3}{5}$ $-\frac{3}{4}$

10. Find $\csc\theta$ and $\cot\theta$ when $\sec\theta = -\frac{4}{3}$ and θ is in quadrant II.



$\frac{4\sqrt{7}}{7}$ $-\frac{3\sqrt{7}}{7}$

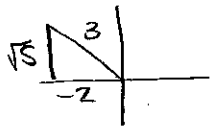
11. Find $\sec\theta$ and $\tan\theta$ when $\sin\theta = \frac{1}{5}$ and θ is in quadrant I.



(#6)

$\frac{5}{2\sqrt{6}} = \frac{5\sqrt{6}}{12}$ $\frac{\sqrt{6}}{12}$

12. Find $\sin\theta$ and $\cot\theta$ when $\cos\theta = -\frac{2}{3}$ and θ is in quadrant II.



$2^2 + y^2 = 3^2$
$4 + y^2 = 9$
$y = \sqrt{5}$

$\frac{\sqrt{5}}{3}$ $-\frac{2\sqrt{5}}{5}$