

KEY

What month is your birthday?

What are the first 2 digits of your address?

What are the last 2 digits of your zip code?

What are the last 2 digits of your social security number?

[IF YOU DO NOT HAVE A SOCIAL SECURITY NUMBER,
USE YOUR STUDENT ID NUMBER]

NO CALCULATORS ALLOWED

Fill in the trigonometric function values.

SCORE: ___ / 3 POINTS

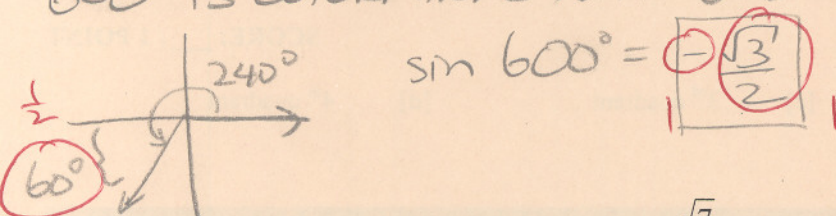
θ	$\sin \theta$	$\cos \theta$	$\tan \theta$
0°	0	1	0
30°	$\frac{1}{2}$	$\frac{\sqrt{3}}{2}$	$\frac{\sqrt{3}}{3}$
45°	$\frac{\sqrt{2}}{2}$	$\frac{\sqrt{2}}{2}$	1
60°	$\frac{\sqrt{3}}{2}$	$\frac{1}{2}$	$\sqrt{3}$
90°	1	0	UNDEF

$-\frac{1}{2}$ FOR EACH ERROR
MINIMUM: 0 POINTS

Find $\sin 600^\circ$. YOU MUST SHOW PROPER WORK.

SCORE: ___ / 3 POINTS

600° IS COTERMINAL WITH $600^\circ - 360^\circ = 240^\circ$ IN Q_3 , SO $\sin 600^\circ < 0$



Use an identity (NOT x, y and r) to find $\sec \theta$ if $\tan \theta = \frac{\sqrt{7}}{3}$ and θ is in the third quadrant.

SCORE: ___ / 3 POINTS

$$\begin{aligned} \sec^2 \theta &= \tan^2 \theta + 1 \\ &= \frac{7}{9} + 1 \\ &= \frac{16}{9} \end{aligned}$$

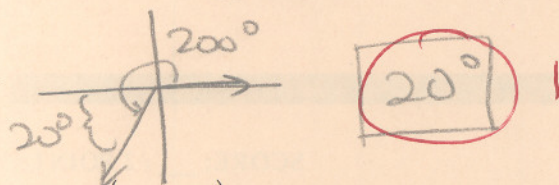
$$\sec \theta = \pm \frac{4}{3}$$

θ IS IN Q_3 , SO $\sec \theta < 0$, SO $\sec \theta = -\frac{4}{3}$

Find the reference angle for -520° . YOU MUST SHOW PROPER WORK.

SCORE: ___ / 2 POINTS

-520° IS COTERMINAL WITH $-520^\circ + 360^\circ \times 2 = 200^\circ$ IN Q_3

Write $\tan(\alpha + 20^\circ)$ in terms of its cofunction.

SCORE: ___ / 1 POINT

$$\cot(90^\circ - (\alpha + 20^\circ)) = \cot(70^\circ - \alpha)$$

QUESTIONS ON OTHER SIDE

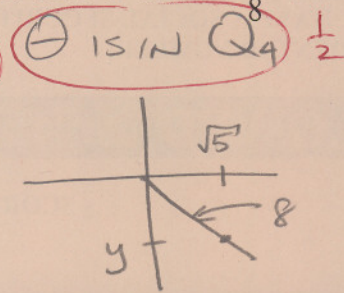
Use any method to find $\cot \theta$ if $\cos \theta = \frac{\sqrt{5}}{8}$ and $\tan \theta < 0$. YOU MUST SHOW PROPER WORK.

SCORE: ___ / 3 POINTS

$$x = \sqrt{5}$$

$$r = 8$$

$$\frac{1}{2}$$



$$8^2 = \sqrt{5}^2 + y^2$$

$$59 = y^2$$

$$y = \pm \sqrt{59}$$

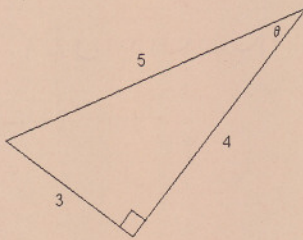
$$y < 0, \text{ so } y = -\sqrt{59}$$

$$\cot \theta = \frac{x}{y}$$

$$= \frac{\sqrt{5}}{-\sqrt{59}}$$

$$= -\frac{\sqrt{295}}{59}$$

Multiple Choice – You do NOT need to show work



Find $\csc \theta$ in the figure.

SCORE: ___ / 1 POINT

- [a] $\frac{3}{4}$ [b] $\frac{3}{5}$ [c] $\frac{4}{3}$ [d] $\frac{4}{5}$ [e] $\frac{5}{3}$ [f] $\frac{5}{4}$

LETTER OF CORRECT ANSWER: E

Identify the quadrant of an angle θ if $\csc \theta < 0$ and $\tan \theta > 0$.

SCORE: ___ / 1 POINT

- [a] 1st quadrant [b] 2nd quadrant [c] 3rd quadrant [d] 4th quadrant

LETTER OF CORRECT ANSWER: C

Consider the following statements:

SCORE: ___ / 1 POINTS

- [1] $\sec \alpha = 0.6$
[2] $\tan \theta = 110.47$

Which of the above statements is/are possible ?

- [a] [1] and [2] are both possible
[b] only [1] is possible
[c] only [2] is possible
[d] neither statement is possible

LETTER OF CORRECT ANSWER: C

$$\tan(-450^\circ) =$$

SCORE: ___ / 2 POINTS

- [a] undefined [b] -1 [c] 1 [d] 0

LETTER OF CORRECT ANSWER: A