

1B

can miss 1

(5 min)

Name

Key

Score

Trig. Function Quiz #1B (Quadrantal Angles:  $\sin$ ,  $\cos$ ,  $\tan$ , & negative angles)

A.  $\sin 0^\circ = 0$

$\cos 90^\circ = 0$

$\sin 360^\circ = 0$

B.  $\tan -270^\circ = \text{Und}$

$\cos 360^\circ = 1$

$\sin -180^\circ = 0$

C.  $\tan 180^\circ = 0$

$\cos 90^\circ = 0$

$\sin 90^\circ = 1$

D.  $\tan 360^\circ = 0$

$\cos 270^\circ = 0$

$\tan -180 = 0$

E.  $\tan 270^\circ = \text{Und}$

$\sin 270^\circ = -1$

$\cos 180^\circ = -1$

F.  $\cos 180^\circ = -1$

$\tan 90^\circ = \text{Und}$

$\sin -90^\circ = -1$

G.  $\sin 90^\circ = 1$

$\cos 270^\circ = 0$

$\tan 270^\circ = \text{Und}$

H.  $\sin 270^\circ = -1$

$\cos 0^\circ = 1$

$\sin 180^\circ = 0$

2B

can miss 2

(5 min)

SCORE \_\_\_\_\_

NAME

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Trig. Function Quiz #2B (Quadrantal Angles: All Six Functions) (27 prob.)

A.  $\csc 90 = 1$

$\cot 0 = \text{und}$

$\cos 270 = 0$

B.  $\sec 0 = 1$

$\tan 180 = 0$

$\sin 360 = 0$

C.  $\csc 180 = \text{und}$

$\tan 0 = 0$

$\cos 90 = 0$

D.  $\sec 180 = -1$

$\sin 90 = 1$

$\csc 0 = \text{und}$

E.  $\tan 270 = \text{und}$

$\sin 270 = -1$

$\cot 90 = 0$

F.  $\csc 270 = -1$

$\cos 0 = 1$

$\sin 180 = 0$

G.  $\cot 180 = \text{und}$

$\csc 360 = \text{und}$

$\cos 90 = 0$

H.  $\tan 90 = \text{und}$

$\sec 270 = \text{und}$

$\cot 360 = \text{und}$

I.  $\sec 90 = \text{und}$

$\cos 180 = -1$

$\tan 0 = 0$

3B

can miss 2

(5 min)

SCORE \_\_\_\_\_

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(34 problems) Trig. Function Quiz # 3B (First Quadrant - all six functions)

A.  $\tan 45 = 1$        $\cos 30 = \frac{\sqrt{3}}{2}$        $\csc 60 = \frac{2\sqrt{3}}{3}$        $\sin 90 = 1$

B.  $\sec 30 = \frac{2\sqrt{3}}{3}$        $\tan 90 = \text{und}$        $\sin 0 = 0$        $\cot 45 = 1$

C.  $\csc 30 = 2$        $\tan 0 = 0$        $\cos 90 = 0$        $\sec 45 = \sqrt{2}$

D.  $\sec 0 = 1$        $\sin 45 = \frac{\sqrt{2}}{2}$        $\csc 0 = \text{und}$        $\cos 45 = \frac{\sqrt{2}}{2}$

E.  $\tan 30 = \frac{\sqrt{3}}{3}$        $\sin 30 = \frac{1}{2}$        $\cot 0 = \text{und}$        $\sec 60 = 2$

F.  $\csc 45 = \sqrt{2}$        $\cos 0 = 1$        $\sin 60 = \frac{\sqrt{3}}{2}$        $\sec 0 = 1$

G.  $\cot 30 = \sqrt{3}$        $\csc 90 = 1$        $\cos 60 = \frac{1}{2}$        $\cot 90 = 0$

H.  $\tan 60 = \sqrt{3}$        $\sec 90 = \text{und}$        $\cot 60 = \frac{\sqrt{3}}{3}$        $\sec 90 = \text{und}$

I.  $\sec 90 = \text{und}$        $\cot 0 = \text{und}$

4B

Can miss 2

(5 min)

SCORE \_\_\_\_\_ NAME Key DATE \_\_\_\_\_

Trigonometry Functions Quiz #4B (Convert between radian/degrees)  
(36 problems)

A.  $45 = \frac{\pi}{4}$      $\frac{3\pi}{4} = 135^\circ$      $\pi = 180^\circ$      $90 = \frac{\pi}{2}$

B.  $330 = \frac{11\pi}{6}$      $180 = \pi$      $\frac{5\pi}{3} = 300^\circ$      $\frac{\pi}{2} = 90^\circ$

C.  $\frac{11\pi}{6} = 330^\circ$      $210 = \frac{7\pi}{6}$      $\frac{7\pi}{6} = 210^\circ$      $360 = 2\pi$

D.  $300 = \frac{5\pi}{3}$      $0 = 0^\circ$      $150 = \frac{5\pi}{6}$      $60 = \frac{\pi}{3}$

E.  $\frac{\pi}{3} = 60$      $30 = \frac{\pi}{6}$      $\frac{5\pi}{6} = 150^\circ$      $120 = \frac{2\pi}{3}$

F.  $240 = \frac{4\pi}{3}$      $\frac{7\pi}{4} = 315^\circ$      $\frac{\pi}{6} = 30^\circ$      $270 = \frac{3\pi}{2}$

G.  $0 = 0$      $\frac{2\pi}{3} = 120^\circ$      $225 = \frac{5\pi}{4}$      $\frac{5\pi}{4} = 225^\circ$

H.  $\frac{4\pi}{3} = 240^\circ$      $315 = \frac{7\pi}{4}$      $\frac{\pi}{4} = 45^\circ$      $\frac{3\pi}{2} = 270^\circ$

I.  $90 = \frac{\pi}{2}$      $\frac{\pi}{6} = 30^\circ$      $240 = \frac{4\pi}{3}$      $-\frac{3\pi}{4} = -135^\circ$

5B

Can miss 2

(5 min)

SCORE Key

NAME

Key

32

(34 problems) Trig. Function Quiz # 5B (Radians/1st Quad./6 Functions)

A.  $\tan \frac{\pi}{4} = 1$

$\cos \frac{\pi}{2} = 0$

$\csc \frac{\pi}{6} = 2$

$\sin 0 = 0$

B.  $\sec \frac{\pi}{3} = 2$

$\tan 0 = 0$

$\sin \frac{\pi}{2} = 1$

$\cot \frac{\pi}{4} = 1$

C.  $\csc 0 = \text{und}$

$\tan \frac{\pi}{6} = \frac{\sqrt{3}}{3}$

$\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

$\sec \frac{\pi}{2} = \text{und}$

D.  $\sec \frac{\pi}{4} = \sqrt{2}$

$\sin \frac{\pi}{6} = \frac{1}{2}$

$\csc \frac{\pi}{4} = \sqrt{2}$

$\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$

E.  $\tan \frac{\pi}{2} = \text{und}$

$\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$

$\cot 0 = \text{und}$

$\sec 0 = 1$

F.  $\csc \frac{\pi}{3} = \frac{2\sqrt{3}}{3}$

$\cos \frac{\pi}{3} = \frac{1}{2}$

$\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$

$\sec \frac{\pi}{3} = 2$

G.  $\cot \frac{\pi}{2} = 0$

$\csc \frac{\pi}{2} = 1$

$\cos 0 = 1$

$\cot \frac{\pi}{3} = \frac{\sqrt{3}}{3}$

H.  $\tan \frac{\pi}{3} = \sqrt{3}$

$\sec \frac{\pi}{6} = \frac{2\sqrt{3}}{3}$

$\cot \frac{\pi}{6} = \sqrt{3}$

$\sec \frac{\pi}{2} = \text{und}$

Can miss 2

10 minutes - but that includes writing on quiz

6B

Key

SCORE \_\_\_\_\_

NAME \_\_\_\_\_

Trig. Function Quiz # 6B (All quadrants/3 Functions) 40 problems in 6 min.

cos 45 =  $\frac{\sqrt{2}}{2}$  sin 120 =  $\frac{\sqrt{3}}{2}$  tan 330 =  $-\frac{\sqrt{3}}{3}$  cos 210 =  $-\frac{\sqrt{3}}{2}$

sin 30 =  $\frac{1}{2}$  tan 60 =  $\sqrt{3}$  sin 330 =  $-\frac{1}{2}$  cos 315 =  $\frac{\sqrt{2}}{2}$

tan 240 =  $\sqrt{3}$  tan 225 =  $1$  cos 180 =  $-1$  sin 135 =  $\frac{\sqrt{2}}{2}$

cos 90 =  $0$  tan 135 =  $-1$  sin 225 =  $-\frac{\sqrt{2}}{2}$  cos 300 =  $\frac{1}{2}$

tan 270 = und sin 210 =  $-\frac{1}{2}$  tan 180 =  $0$  cos 330 =  $\frac{\sqrt{3}}{2}$

sin 45 =  $\frac{\sqrt{2}}{2}$  cos 30 =  $\frac{\sqrt{3}}{2}$  sin 90 =  $1$  tan 120 =  $-\sqrt{3}$

cos 150 =  $-\frac{\sqrt{3}}{2}$  sin 180 =  $0$  cos 360 =  $1$  sin 300 =  $-\frac{\sqrt{3}}{2}$

tan 150 =  $-\frac{\sqrt{3}}{3}$  sin 300 =  $-\frac{\sqrt{3}}{2}$  tan 30 =  $\frac{\sqrt{3}}{3}$  tan 45 =  $1$

cos 135 =  $-\frac{\sqrt{2}}{2}$  tan 90 = und sin 360 =  $0$  tan 315 =  $-1$

sin 150 =  $\frac{1}{2}$  cos 240 =  $-\frac{1}{2}$  cos 225 =  $-\frac{\sqrt{2}}{2}$  tan 0 =  $0$

7B

(9 min. - can miss 3)

SCORE \_\_\_\_\_

NAME Key

44  
problems

Trig. Function Quiz #7B  
(Radians / 4 Quadrants / 3 Functions)

- A.  $\tan \frac{\pi}{3}$   $\sqrt{3}$      $\sin \frac{3\pi}{4}$   $\frac{\sqrt{2}}{2}$      $\cos \frac{5\pi}{3}$   $\frac{1}{2}$      $\tan \frac{\pi}{2}$  Und
- B.  $\cos \frac{\pi}{4}$   $\frac{\sqrt{2}}{2}$      $\sin 2\pi$  0     $\tan \frac{5\pi}{4}$  1     $\cos \frac{3\pi}{4}$   $-\frac{\sqrt{2}}{2}$
- C.  $\tan \frac{4\pi}{3}$   $\sqrt{3}$      $\cos \frac{7\pi}{6}$   $-\frac{\sqrt{3}}{2}$      $\sin \frac{\pi}{6}$   $\frac{1}{2}$      $\sin \frac{5\pi}{6}$   $\frac{1}{2}$
- D.  $\cos \frac{3\pi}{2}$  0     $\tan \frac{2\pi}{3}$   $-\sqrt{3}$      $\cos \frac{7\pi}{4}$   $\frac{\sqrt{2}}{2}$      $\tan 0$  0
- E.  $\sin \frac{3\pi}{2}$  -1     $\sin \frac{5\pi}{3}$   $-\frac{\sqrt{3}}{2}$      $\tan \frac{5\pi}{6}$   $-\frac{\sqrt{3}}{3}$      $\cos 2\pi$  1
- F.  $\cos \frac{5\pi}{6}$   $-\frac{\sqrt{3}}{2}$      $\sin \frac{7\pi}{6}$   $-\frac{1}{2}$      $\tan \frac{\pi}{4}$  1     $\tan \frac{3\pi}{2}$  Und
- G.  $\tan \pi$  0     $\cos \frac{\pi}{3}$   $\frac{1}{2}$      $\sin 2\pi$  0     $\cos \frac{\pi}{2}$  0
- H.  $\sin \frac{2\pi}{3}$   $\frac{\sqrt{3}}{2}$      $\cos \frac{5\pi}{3}$   $\frac{1}{2}$      $\tan \frac{11\pi}{6}$   $-\frac{\sqrt{3}}{3}$      $\sin \frac{\pi}{4}$   $\frac{\sqrt{2}}{2}$
- I.  $\cos \frac{7\pi}{4}$   $\frac{\sqrt{2}}{2}$      $\tan \frac{\pi}{6}$   $\frac{\sqrt{3}}{3}$      $\sin \frac{\pi}{3}$   $\frac{\sqrt{3}}{2}$      $\tan \frac{7\pi}{6}$   $\frac{\sqrt{3}}{3}$
- J.  $\tan \frac{5\pi}{3}$   $-\sqrt{3}$      $\sin \frac{\pi}{2}$  1     $\cos \pi$  -1     $\cos \frac{5\pi}{4}$   $-\frac{\sqrt{2}}{2}$
- K.  $\sin \frac{3\pi}{4}$   $\frac{\sqrt{2}}{2}$      $\cos \frac{11\pi}{6}$   $\frac{\sqrt{3}}{2}$      $\tan \frac{7\pi}{4}$  -1     $\sin \frac{7\pi}{4}$   $-\frac{\sqrt{2}}{2}$

98

(8 minutes - can miss 4)

SCORE \_\_\_\_\_

NAME \_\_\_\_\_

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Trig. Function Quiz 88 48 problems  
(Radians / 4 Quadrants / 6 Functions)

- A.  $\csc \pi$  (Und)  $\sec \frac{\pi}{4}$  ( $\sqrt{2}$ )  $\cos \frac{11\pi}{6}$  ( $\frac{\sqrt{3}}{2}$ )  $\tan \frac{5\pi}{4}$  (1)
- B.  $\cot \frac{\pi}{2}$  (0)  $\sin \frac{5\pi}{4}$  ( $-\frac{\sqrt{2}}{2}$ )  $\sec \frac{2\pi}{3}$  (-2)  $\csc \frac{7\pi}{4}$  ( $-\sqrt{2}$ )
- C.  $\tan \frac{\pi}{6}$  ( $\frac{\sqrt{3}}{3}$ )  $\cos \frac{5\pi}{3}$  ( $\frac{1}{2}$ )  $\sin \frac{7\pi}{6}$  ( $-\frac{1}{2}$ )  $\cos \frac{\pi}{3}$  ( $\frac{1}{2}$ )
- D.  $\sec 2\pi$  (1)  $\cot \frac{5\pi}{6}$  ( $-\sqrt{3}$ )  $\csc \frac{3\pi}{2}$  (-1)  $\tan \frac{7\pi}{6}$  ( $\frac{\sqrt{3}}{3}$ )
- E.  $\sin \frac{7\pi}{4}$  ( $-\frac{\sqrt{2}}{2}$ )  $\cos \frac{\pi}{4}$  ( $\frac{\sqrt{2}}{2}$ )  $\tan \frac{3\pi}{4}$  (-1)  $\cot \frac{5\pi}{4}$  (1)
- F.  $\sec \frac{11\pi}{6}$  ( $\frac{2\sqrt{3}}{3}$ )  $\sin \frac{5\pi}{3}$  ( $-\frac{\sqrt{3}}{2}$ )  $\csc \frac{5\pi}{4}$  ( $-\sqrt{2}$ )  $\tan \pi$  (0)
- G.  $\tan \frac{7\pi}{4}$  (-1)  $\cos \frac{3\pi}{2}$  (0)  $\csc 2\pi$  (Und)  $\cot \frac{3\pi}{2}$  (0)
- H.  $\sin \frac{11\pi}{6}$  ( $-\frac{1}{2}$ )  $\cos \frac{7\pi}{4}$  ( $\frac{\sqrt{2}}{2}$ )  $\sec \frac{7\pi}{6}$  ( $-\frac{2\sqrt{3}}{3}$ )  $\sec \frac{\pi}{3}$  (2)
- I.  $\csc \frac{5\pi}{6}$  (2)  $\cos \pi$  (-1)  $\sin \frac{5\pi}{3}$  ( $-\frac{\sqrt{3}}{2}$ )  $\tan 0$  (0)
- J.  $\cot \frac{7\pi}{4}$  (-1)  $\cot \frac{\pi}{6}$  ( $\sqrt{3}$ )  $\sec \frac{5\pi}{4}$  ( $-\sqrt{2}$ )  $\cos \frac{3\pi}{4}$  ( $-\frac{\sqrt{2}}{2}$ )
- K.  $\sin 2\pi$  (0)  $\cot \frac{3\pi}{4}$  (-1)  $\tan \frac{\pi}{3}$  ( $\sqrt{3}$ )  $\csc \pi$  (Und)
- L.  $\cos \frac{\pi}{6}$  ( $\frac{\sqrt{3}}{2}$ )  $\sin \frac{\pi}{4}$  ( $\frac{\sqrt{2}}{2}$ )  $\csc \frac{2\pi}{3}$  ( $\frac{2\sqrt{3}}{3}$ )  $\tan \frac{3\pi}{2}$  (Und)



#9A+B

Scoring: at least 15 for 1/2 point  
at least 26 for full point

(Not Timed)

Trigonometry Identities &amp; Formulas

QUIZ #9A+B

Name

Key

## Reciprocal Identities

$$\sin \theta = \frac{1}{\csc \theta} \quad \cos \theta = \frac{1}{\sec \theta} \quad \tan \theta = \frac{1}{\cot \theta} \quad \cot \theta = \frac{1}{\tan \theta} \quad \csc \theta = \frac{1}{\sin \theta} \quad \sec \theta = \frac{1}{\cos \theta}$$

## Quotient Identities

$$\tan \theta = \frac{\sin \theta}{\cos \theta} \quad \cot \theta = \frac{\cos \theta}{\sin \theta}$$

## Pythagorean Identities

$$\sin^2 \theta + \cos^2 \theta = 1$$

$$\tan^2 \theta + 1 = \sec^2 \theta$$

$$\cot^2 \theta + 1 = \csc^2 \theta$$

## Negative Angle Identities

$$\sin(-\theta) = -\sin \theta$$

$$\cos(-\theta) = \cos \theta$$

$$\tan(-\theta) = -\tan \theta$$

$$\csc(-\theta) = -\csc \theta$$

$$\sec(-\theta) = \sec \theta$$

$$\cot(-\theta) = -\cot \theta$$

## Difference Formulas

$$\cos(A - B) = \cos A \cos B + \sin A \sin B$$

$$\sin(A - B) = \sin A \cos B - \cos A \sin B$$

$$\tan(A - B) = \frac{\tan A - \tan B}{1 + \tan A \tan B}$$

## Sum Formulas

$$\cos(A + B) = \cos A \cos B - \sin A \sin B$$

$$\sin(A + B) = \sin A \cos B + \cos A \sin B$$

$$\tan(A + B) = \frac{\tan A + \tan B}{1 - \tan A \tan B}$$

## Double Angle Formulas

$$\cos 2A = \cos^2 A - \sin^2 A \quad \text{or} \quad \cos 2A = 1 - 2\sin^2 A \quad \text{or} \quad \cos 2A = 2\cos^2 A - 1$$

$$\sin 2A = 2\sin A \cos A$$

$$\tan 2A = \frac{2\tan A}{1 - \tan^2 A}$$

## Power Reducing Formulas

$$\sin^2 u = \frac{1 - \cos 2u}{2}$$

$$\cos^2 u = \frac{1 + \cos 2u}{2}$$

$$\tan^2 u = \frac{1 - \cos 2u}{1 + \cos 2u}$$

10B

5 min

Can miss 4

SCORE \_\_\_\_\_ (can miss 4)

NAME Key

Trig. Function Quiz #10B 24 problems - 5 min.  
(Inverse Functions / 4 Quadrants / 3 Functions)

\*\*Remember to only use defined quadrants!

Answers may be expressed in radians or degrees.

A.  $\cos^{-1} \frac{1}{\sqrt{2}}$   $\left(\frac{\pi}{4}\right)$   $(45^\circ)$

$\sin^{-1} -1$   $\left(-\frac{\pi}{2}\right)$   $(-90)$

$\arctan -\frac{1}{\sqrt{3}}$   $\left(-\frac{\pi}{6}\right)$   $(-30)$

B.  $\arccos -\frac{\sqrt{3}}{2}$   $\left(\frac{5\pi}{6}\right)$   $(150^\circ)$

$\sin^{-1} \frac{1}{2}$   $\left(\frac{\pi}{6}\right)$   $(30^\circ)$

$\arccos 1$   $(0 \text{ rad})$   $(0^\circ)$

C.  $\tan^{-1} 0$   $(0 \text{ rad})$   $(0^\circ)$

$\cos^{-1} -\frac{1}{\sqrt{2}}$   $\left(\frac{3\pi}{4}\right)$   $(135^\circ)$

$\arcsin 0$   $(0 \text{ rad})$   $(0^\circ)$

D.  $\sin^{-1} -\frac{\sqrt{3}}{2}$   $\left(-\frac{\pi}{3}\right)$   $(-60)$

$\arctan 1$   $\left(\frac{\pi}{4}\right)$   $(45^\circ)$

$\sin^{-1} \frac{1}{\sqrt{2}}$   $\left(\frac{\pi}{4}\right)$   $(45^\circ)$

E.  $\tan^{-1} \sqrt{3}$   $\left(\frac{\pi}{3}\right)$   $(60^\circ)$

$\sin^{-1} \frac{\sqrt{3}}{2}$   $\left(\frac{\pi}{3}\right)$   $(60^\circ)$

$\arccos 0$   $\left(\frac{\pi}{2}\right)$   $(90^\circ)$

F.  $\sin^{-1} -\frac{1}{\sqrt{2}}$   $\left(-\frac{\pi}{4}\right)$   $(-45^\circ)$

$\arctan \frac{1}{\sqrt{3}}$   $\left(\frac{\pi}{6}\right)$   $(30^\circ)$

$\cos^{-1} \frac{1}{2}$   $\left(\frac{\pi}{3}\right)$   $(60^\circ)$

G.  $\arccos \frac{\sqrt{3}}{2}$   $\left(\frac{\pi}{6}\right)$   $(30^\circ)$

$\arcsin 1$   $\left(\frac{\pi}{2}\right)$   $(90^\circ)$

$\tan^{-1} -1$   $\left(-\frac{\pi}{4}\right)$   $(-45^\circ)$

H.  $\arctan -\sqrt{3}$   $\left(-\frac{\pi}{3}\right)$   $(-60^\circ)$

$\sin^{-1} -\frac{1}{2}$   $\left(-\frac{\pi}{6}\right)$   $(-30^\circ)$

$\tan^{-1} -1$   $\left(-\frac{\pi}{4}\right)$   $(-45^\circ)$

12B

Extra Credit

(min - can miss 3)



SCORE \_\_\_\_\_

NAME Key

Trig. Function Quiz 12B 44 problems  
(Radians & Degrees / 4 Quadrants / 3 Functions)

- |    |                       |                                    |                      |                                    |                      |                                    |                      |                                    |
|----|-----------------------|------------------------------------|----------------------|------------------------------------|----------------------|------------------------------------|----------------------|------------------------------------|
| A. | cos 300               | $\left(\frac{1}{2}\right)$         | tan 45               | $(1)$                              | cos $\frac{5\pi}{4}$ | $\left(\frac{-\sqrt{2}}{2}\right)$ | sin 60               | $\left(\frac{\sqrt{3}}{2}\right)$  |
| B. | tan $\frac{\pi}{3}$   | $(\sqrt{3})$                       | sin $\frac{3\pi}{4}$ | $\left(\frac{\sqrt{2}}{2}\right)$  | tan 210              | $\left(\frac{\sqrt{3}}{3}\right)$  | cos $\pi$            | $(-1)$                             |
| C. | tan $\frac{3\pi}{2}$  | <u>Und</u>                         | cos 30               | $\left(\frac{\sqrt{3}}{2}\right)$  | tan $\frac{2\pi}{3}$ | $(-\sqrt{3})$                      | cos $\frac{\pi}{6}$  | $\left(\frac{\sqrt{3}}{2}\right)$  |
| D. | sin 120               | $\left(\frac{\sqrt{3}}{2}\right)$  | tan 240              | $(\sqrt{3})$                       | cos 90               | $(0)$                              | tan $\frac{5\pi}{3}$ | $(-\sqrt{3})$                      |
| E. | sin $\frac{11\pi}{6}$ | $\left(-\frac{1}{2}\right)$        | sin 225              | $\left(\frac{-\sqrt{2}}{2}\right)$ | tan 270              | <u>Und</u>                         | cos $\frac{\pi}{4}$  | $\left(\frac{\sqrt{2}}{2}\right)$  |
| F. | cos 150               | $\left(\frac{-\sqrt{3}}{2}\right)$ | sin $2\pi$           | $(0)$                              | tan $\frac{3\pi}{4}$ | $(-1)$                             | sin 0                | $(0)$                              |
| G. | tan 315               | $(-1)$                             | cos $\frac{\pi}{4}$  | $\left(\frac{\sqrt{2}}{2}\right)$  | sin $\frac{7\pi}{4}$ | $\left(\frac{-\sqrt{2}}{2}\right)$ | cos 135              | $\left(\frac{-\sqrt{2}}{2}\right)$ |
| H. | sin 300               | $\left(\frac{-\sqrt{3}}{2}\right)$ | cos $\frac{5\pi}{6}$ | $\left(\frac{-\sqrt{3}}{2}\right)$ | tan $\frac{\pi}{6}$  | $\left(\frac{\sqrt{3}}{3}\right)$  | sin $\frac{3\pi}{4}$ | $\left(\frac{\sqrt{2}}{2}\right)$  |
| I. | cos 0                 | $(1)$                              | tan 180              | $(0)$                              | sin 45               | $\left(\frac{\sqrt{2}}{2}\right)$  | tan $\frac{4\pi}{3}$ | $(\sqrt{3})$                       |
| J. | tan $\frac{7\pi}{4}$  | $(-1)$                             | sin $\frac{\pi}{2}$  | $(1)$                              | cos $\frac{5\pi}{4}$ | $\left(\frac{-\sqrt{2}}{2}\right)$ | cos 330              | $\left(\frac{\sqrt{3}}{2}\right)$  |
| K. | sin 240               | $\left(\frac{-\sqrt{3}}{2}\right)$ | cos $\frac{2\pi}{3}$ | $\left(\frac{-1}{2}\right)$        | tan 30               | $\left(\frac{\sqrt{3}}{3}\right)$  | sin $\frac{7\pi}{6}$ | $\left(-\frac{1}{2}\right)$        |