

IA

can miss 1

Name Key

Score (5 min.)

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

A. $\cos 180^\circ = \underline{-1}$ $\tan 90^\circ = \underline{u}$ $\sin -90^\circ = \underline{-1}$

B. $\tan 360^\circ = \underline{0}$ $\cos 270^\circ = \underline{0}$ $\tan -180 = \underline{0}$

C. $\sin 0^\circ = \underline{0}$ $\cos 270^\circ = \underline{0}$ $\sin 360^\circ = \underline{0}$

D. $\sin 90^\circ = \underline{1}$ $\cos -90^\circ = \underline{0}$ $\tan 270^\circ = \underline{Und}$

E. $\tan 180^\circ = \underline{0}$ $\cos 90^\circ = \underline{0}$ $\sin 90^\circ = \underline{1}$

F. $\sin 270^\circ = \underline{-1}$ $\cos 0^\circ = \underline{1}$ $\sin 180^\circ = \underline{0}$

G. $\tan -270^\circ = \underline{Und}$ $\cos 360^\circ = \underline{1}$ $\sin 180^\circ = \underline{0}$

H. $\tan 270^\circ = \underline{Und}$ $\sin 270^\circ = \underline{-1}$ $\cos 180^\circ = \underline{-1}$

2A

Can miss 1

5 min

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#2A

Trig. Function Quiz #1 (Quadrantal Angles: All six functions) (27 prob)

A. $\sec 0 = 1$

$\csc 180 = \text{und}$

$\sin 90 = 1$

B. $\sec 180 = -1$

$\tan 270 = \text{und}$

$\cot 360 = \text{und}$

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

$\csc 0 = \text{und}$

$\cos 360 = 1$

D. $\sin 180 = 0$

$\sec 270 = \text{und}$

$\cot 0 = \text{und}$

E. $\sec 360 = 1$

$\sin 0 = 0$

$\csc 180 = \text{und}$

F. $\tan 0 = 0$

$\cot 180 = \text{und}$

$\cos 270 = 0$

G. $\csc 360 = \text{und}$

$\sec 90 = \text{und}$

$\tan 180 = 0$

H. $\cos 90 = 0$

$\csc 270 = -1$

$\sin 270 = -1$

I. $\cot 90 = 0$

$\tan 360 = 0$

$\sec 0 = 1$

3A

Can Miss 2

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5 min

40 problems #3A

TRIGONOMETRY FUNCTIONS QUIZ (1st Quadrant, 6 functions)

A. $\sin 45 = \frac{\sqrt{2}}{2}$ $\cos 90 = 0$ $\tan 0 = 0$ $\tan 90 = \text{und}$

B. $\cos 45 = \frac{\sqrt{2}}{2}$ $\sec 60 = 2$ $\cos 60 = \frac{1}{2}$ $\cot 45 = 1$

C. $\tan 30 = \frac{\sqrt{3}}{3}$ $\sin 60 = \frac{\sqrt{3}}{2}$ $\csc 0 = \text{und}$ $\sec 90 = \text{und}$

D. $\cos 30 = \frac{\sqrt{3}}{2}$ $\csc 90 = 1$ $\sec 0 = 1$ $\csc 30 = 2$

E. $\csc 45 = \sqrt{2}$ $\sin 30 = \frac{1}{2}$ $\cot 30 = \sqrt{3}$

F. $\tan 45 = 1$ $\cos 0 = 1$ $\cos 60 = \frac{1}{2}$ $\tan 45 = 1$

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

H. $\cos 30 = \frac{\sqrt{3}}{2}$ $\tan 60 = \sqrt{3}$ $\tan 0 = 0$ $\sin 90 = 1$

I. $\sec 30 = \frac{2\sqrt{3}}{3}$ $\cos 45 = \frac{\sqrt{2}}{2}$ $\sec 45 = \sqrt{2}$

4A

Quiz #4A

Key

get to miss 2

SCORE: _____ NAME _____

DATE: 5 min

Trigonometry Functions Quiz (Convert between radian/degrees)

A. 90 = π/2 3π/4 = 135° 240 = 4π/3 135 = 3π/4

B. 11π/6 = 330° 180 = π π/3 = 60 330 = 11π/6

C. 210 = 7π/6 5π/6 = 150° 60 = π/3 π = 180°

D. 0 = 0° 270 = 3π/2 5π/3 = 300° 5π/4 = 225°

E. 4π/3 = 240° 45 = π/4 3π/2 = 270° 150 = 5π/6

F. 120 = 2π/3 π/6 = 30 300 = 5π/3 7π/4 = 315

G. π/4 = 45 30 = π/6 7π/6 = 210 360 = 2π

H. 225 = 5π/4 π/2 = 90 315 = 7π/4 2π = 360°

I. π/3 = 60 120 = 2π/3 3π/2 = 270 180 = π

Key

5A

Can miss 2

5 min

SCORE: _____

NAME Key

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5A

Trigonometry Functions Quiz #● (Radians/1st Quad/6 Functions)
36 problems

- A. $\sin \frac{\pi}{2} = 1$ $\cos \frac{\pi}{3} = \frac{1}{2}$ $\tan 0 = 0$ $\tan \frac{\pi}{4} = 1$
- B. $\cos 0 = 1$ $\sec \frac{\pi}{6} = \frac{2\sqrt{3}}{3}$ $\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$ $\cot \frac{\pi}{2} = 0$
- C. $\tan \frac{\pi}{6} = \frac{\sqrt{3}}{3}$ $\sin 0 = 0$ $\csc \frac{\pi}{2} = 1$ $\sec \frac{\pi}{2} = \text{und}$
- D. $\cos \frac{\pi}{2} = 0$ $\csc \frac{\pi}{6} = 2$ $\sec \frac{\pi}{3} = 2$ $\csc 0 = \text{und}$
- E. $\csc \frac{\pi}{3} = \frac{2\sqrt{3}}{3}$ $\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$ $\cot \frac{\pi}{6} = \sqrt{3}$ $\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$
- F. $\tan \frac{\pi}{3} = \sqrt{3}$ $\cos \frac{\pi}{3} = \frac{1}{2}$ $\cos \frac{\pi}{3} = \frac{1}{2}$ $\tan \frac{\pi}{2} = \text{und}$
- G. $\sin \frac{\pi}{6} = \frac{1}{2}$ $\cot \frac{\pi}{3} = \frac{\sqrt{3}}{3}$ $\cos 0 = 1$ $\csc \frac{\pi}{4} = \sqrt{2}$
- H. $\cos \frac{\pi}{6} = \frac{\sqrt{3}}{2}$ $\tan 0 = 0$ $\tan \frac{\pi}{4} = 1$ $\sin \frac{\pi}{3} = \frac{\sqrt{3}}{2}$

Key

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2

Quiz #6A

10 min

NAME Key

TRIGONOMETRY FUNCTIONS QUIZ

$\sin 30^\circ = \frac{1}{2}$

$\cos 90^\circ = 0$

$\tan 0^\circ = 0$

$\tan 45^\circ = 1$

$\cos 135^\circ = -\frac{\sqrt{2}}{2}$

$\sin 225^\circ = -\frac{\sqrt{2}}{2}$

$\cos -30^\circ = \frac{\sqrt{3}}{2}$

$\sin 270^\circ = -1$

$\tan 315^\circ = -1$

$\sin 150^\circ = \frac{1}{2}$

$\cos 180^\circ = -1$

$\sin 60^\circ = \frac{\sqrt{3}}{2}$

$\cos 30^\circ = \frac{\sqrt{3}}{2}$

$\tan 240^\circ = \sqrt{3}$

$\cos 330^\circ = \frac{\sqrt{3}}{2}$

$\cos 315^\circ = \frac{\sqrt{2}}{2}$

$\sin 180^\circ = 0$

$\sin -60^\circ = -\frac{\sqrt{3}}{2}$

$\tan 30^\circ = \frac{\sqrt{3}}{3}$

$\cos 0^\circ = 1$

$\tan 45^\circ = 1$

$\cos 180^\circ = -1$

$\cos 60^\circ = \frac{1}{2}$

$\tan 30^\circ = \frac{\sqrt{3}}{3}$

$\sin 0^\circ = 0$

$\sin 210^\circ = -\frac{1}{2}$

$\cos 120^\circ = -\frac{1}{2}$

$\tan 315^\circ = -1$

$\cos 30^\circ = \frac{\sqrt{3}}{2}$

$\tan 180^\circ = 0$

$\tan 240^\circ = \sqrt{3}$

$\sin 90^\circ = 1$

$\sin 300^\circ = -\frac{\sqrt{3}}{2}$

$\cos 45^\circ = \frac{\sqrt{2}}{2}$

$\cos 270^\circ = 0$

$\tan 60^\circ = \sqrt{3}$

$\tan 60^\circ = \sqrt{3}$

$\sin 315^\circ = -\frac{\sqrt{2}}{2}$

$\sin 180^\circ = 0$

$\tan 330^\circ = -\frac{\sqrt{3}}{3}$

Key

Quiz 7A

car miss +3

9 min

NAME Key

#7A

TRIGONOMETRY FUNCTIONS QUIZ

sin π = 0

cos 2π/3 = -1/2

tan π/2 = und

tan 0 = 0

cos π/3 = 1/2

sin π/4 = √2/2

cos 5π/3 = 1/2

sin π/6 = 1/2

tan 2π = 0

sin π/2 = 1

cos 7π/4 = √2/2

sin 5π/6 = 1/2

cos π = -1

tan 5π/4 = 1

cos π/6 = √3/2

cos π/2 = 0

sin 11π/6 = -1/2

sin 3π/2 = -1

tan π/3 = √3

cos π/4 = √2/2

tan π = 0

cos 7π/6 = -√3/2

cos 3π/4 = -√2/2

tan 11π/6 = -√3/3

sin 5π/3 = -√3/2

sin π/3 = √3/2

cos 5π/6 = -√3/2

tan 3π/2 = und

cos 5π/4 = -√2/2

tan 3 = -√3

tan π/6 = √3/3

sin 3π/4 = √2/2

sin 2π = 0

cos 11π/6 = √3/2

cos 7π/6 = -√3/2

tan 6 = -√3/3

tan 7π/6 = √3/3

sin 7π/4 = -√2/2

sin 0 = 0

tan 4π/3 = √3

cos 5π/4 = -√2/2

sin 7π/6 = -1/2

tan 7π/4 = -1

cos 3π/2 = 0

#9A

7 min.
can miss 4

SCORE: 9A

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TRIGONOMETRY FUNCTIONS QUIZ
(Radians/4 Quad/6 Functions)

#9A

48 problems

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

#9A+B

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

(Not Timed)

Trigonometry Identities & Formulas

QUIZ #9A+B

Name

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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

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

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

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

10A

6 min
can miss 4

SCORE _____ (can miss 4)

NAME _____

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Trig. Function Quiz #10A 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. $\tan^{-1} \sqrt{3} = \left(\frac{\pi}{3}\right) (60^\circ)$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

11A

Extra Credit

can miss 24

6 min

40 problems - 6 minutes

Name

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Trigonometry Function Quiz #11 (extra credit)

(all functions, all quadrants, negative angles, angles over 360 degrees)

A. $\csc -30 = -2$ $\cot -210 = -\sqrt{3}$ $\sin 540 = 0$ $\tan -90 = \text{Und}$

B. $\sec -225 = -\sqrt{2}$ $\cos 495 = -\frac{\sqrt{2}}{2}$ $\tan -270 = \text{Und}$ $\sin 675 = \frac{-\sqrt{2}}{2}$

C. $\cot -60 = \frac{-\sqrt{3}}{3}$ $\csc -180 = \text{Und}$ $\sec 420 = 2$ $\cos -135 = \frac{-\sqrt{2}}{2}$

D. $\csc -210 = 2$ $\sin 405 = \frac{\sqrt{2}}{2}$ $\tan 480 = -\sqrt{3}$ $\sec -120 = -2$

E. $\cos 405 = \frac{\sqrt{2}}{2}$ $\cot -150 = \sqrt{3}$ $\tan 390 = \frac{\sqrt{3}}{3}$ $\csc 450 = 1$

F. $\sec -330 = \frac{2\sqrt{3}}{3}$ $\sin 630 = -1$ $\cos -300 = \frac{1}{2}$ $\tan -240 = -\sqrt{3}$

G. $\csc 720 = \text{Und}$ $\cot -315 = 1$ $\tan -45 = -1$ $\sec 660 = 2$

H. $\sin 585 = \frac{-\sqrt{2}}{2}$ $\cot -30 = -\sqrt{3}$ $\cos 600 = \frac{-1}{2}$ $\sec 570 = \frac{-2\sqrt{3}}{3}$

I. $\tan 690 = \frac{\sqrt{3}}{3}$ $\csc 510 = 2$ $\sin -180 = 0$ $\cot -240 = \frac{-\sqrt{3}}{3}$

J. $\cos -360 = 1$ $\csc -90 = -1$ $\tan 405 = 1$ $\sec -240 = -2$

SCORE: 12ANAME Can miss 412ADATE: Key16 minEXTRA CREDIT

TRIG FUNCTIONS QUIZ (Radian & Degree/4 Quad/3 Func) 44 problems

A. $\sin 210 = -\frac{1}{2}$ $\cos \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$ $\tan 300 = -\sqrt{3}$ $\tan \frac{5\pi}{3} = -\sqrt{3}$

B. $\cos \frac{3\pi}{2} = 0$ $\sin 225 = -\frac{\sqrt{2}}{2}$ $\cos \frac{7\pi}{6} = -\frac{\sqrt{3}}{2}$ $\sin 270 = -1$

C. $\tan 135 = -1$ $\sin \frac{4\pi}{3} = -\frac{\sqrt{3}}{2}$ $\tan \frac{\pi}{6} = \frac{\sqrt{3}}{3}$ $\cos 60 = \frac{1}{2}$

D. $\cos 30 = \frac{\sqrt{3}}{2}$ $\tan \frac{5\pi}{6} = -\frac{\sqrt{3}}{3}$ $\tan 330 = -\frac{\sqrt{3}}{3}$ $\sin \frac{11\pi}{6} = -\frac{1}{2}$

E. $-\frac{\sqrt{3}}{2}$ $\cos \frac{2\pi}{3} = -\frac{1}{2}$ $\sin 150 = \frac{1}{2}$ $\cos 0 = 1$

F. $\tan 210 = \frac{\sqrt{3}}{3}$ $\sin \frac{5\pi}{4} = -\frac{\sqrt{2}}{2}$ $\cos 60 = \frac{1}{2}$ $\tan \frac{\pi}{3} = \sqrt{3}$

G. $\sin 330 = -\frac{1}{2}$ $\sin \frac{\pi}{2} = 1$ $\cos 120 = -\frac{1}{2}$ $\tan 315 = -1$

H. $\tan \pi = 0$ $\tan 150 = -\frac{\sqrt{3}}{3}$ $\tan \frac{5\pi}{4} = 1$ $\sin 90 = 1$

I. $\sin \frac{\pi}{4} = \frac{\sqrt{2}}{2}$ $\sin 120 = \frac{\sqrt{3}}{2}$ $\cos \frac{\pi}{3} = \frac{1}{2}$ $\cos \frac{4\pi}{3} = -\frac{1}{2}$

J. $\cos 240 = -\frac{1}{2}$ $\sin 315 = -\frac{\sqrt{2}}{2}$ $\sin \frac{3\pi}{4} = \frac{\sqrt{2}}{2}$ $\tan 330 = -\frac{\sqrt{3}}{3}$

K. $\tan \frac{11\pi}{6} = -\frac{\sqrt{3}}{3}$ $\cos 150 = -\frac{\sqrt{3}}{2}$ $\sin \frac{7\pi}{4} = -\frac{\sqrt{2}}{2}$ $\cos 135 = -\frac{\sqrt{2}}{2}$