



# MATHS

## BOOKS - KAPLAN INC MATHS (ENGLISH)

### TRIGONOMETRY

#### How Much Do You Know

1. If  $\tan x = \frac{7}{24}$ , then what is the value of  $\sin x$  ?



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2. In a right triangle, one of the acute angles is  $\cos\left(\frac{\pi}{3}\right)$ , and  $\cos\left(\frac{\pi}{3}\right) = \sin x$ . What is the measure of  $x$ ?

A.  $\frac{\pi}{12}$

B.  $\frac{\pi}{6}$

C.  $\frac{\pi}{3}$

D.  $\frac{2\pi}{3}$

**Answer: B**



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## Try On Your Own

1. Triangle PQR is a right triangle with the  $90^\circ$  angle at vertex Q. The length of side PQ is 25 and the length of side QR is 60. Triangle STU is similar to triangle PRQ. The vertices S, T, and U correspond to vertices P, Q, and R, respectively. Each side of triangle STU is  $\frac{1}{10}$  the length of the corresponding side of triangle PRQ. What is the value of  $\cos \angle U$ ?

A.  $\frac{5}{13}$

B.  $\frac{5}{12}$

C.  $\frac{5}{6}$

D.  $\frac{12}{13}$

**Answer: D**



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2. If  $\sin x = \cos\left(\frac{13\pi}{6}\right)$ , which of the following could be the value of  $x$  ?

A.  $\frac{\pi}{6}$

B.  $\frac{\pi}{4}$

C.  $\frac{\pi}{3}$

D.  $\frac{\pi}{2}$

**Answer: C**



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**3.** If  $\cos x = \sin y$ , then which of the following pairs of angle measures could NOT be the values of  $x$  and  $y$ , respectively ?

A.  $\frac{\pi}{4}, \frac{\pi}{4}$

B.  $\frac{\pi}{6}, \frac{\pi}{3}$

C.  $\frac{\pi}{8}, \frac{3\pi}{8}$

D.  $\frac{\pi}{2}, \frac{\pi}{2}$

**Answer: D**



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4. Angle  $x$  is one of the acute angles in a right triangle. If the measure of angles is  $30^\circ$ , what is the value of  $(\sin x)^2 + (\cos x)^2$  ?

A.  $\frac{1}{4}$

B.  $\frac{1}{2}$

C. 1

D. 2

**Answer: C**



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5. In a certain triangle, the measures of  $\angle A$  and  $\angle B$  are  $(6k - 8)^\circ$  and  $(7k - 45)^\circ$ ,

respectively. If  $\frac{\sin \angle A}{\cos \angle B} = 1$ , what is the value of  $k$ ?



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## Sine Cosine And Tangent

1. One angle in a right triangle measures  $y^\circ$  such that  $\cos y^\circ = \frac{24}{25}$ . What is the measure of  $\sin(90^\circ - y^\circ)$ ?



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