



# MATHS

## BOOKS - KAPLAN INC MATHS (ENGLISH)

### TRIGONOMETRY

#### Multiple Choice Question

1. Davis drew a unit circle and labeled the cosine and sine of  $45^\circ$  as  $\left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right)$ . As

suming that Davis is correct, which of the following statements must be true?

A.  $\cos\left(\frac{\pi}{4}\right) = \frac{\sqrt{2}}{2}$

B.  $\cos\left(\frac{\pi}{3}\right) = \frac{\sqrt{2}}{2}$

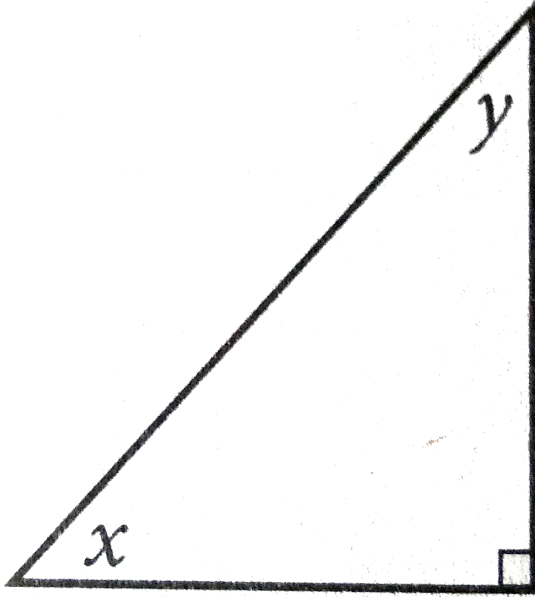
C.  $\cos\left(\frac{\pi}{2}\right) = \frac{\sqrt{2}}{2}$

D.  $\cos(\pi) = \frac{\sqrt{2}}{2}$

**Answer: A**



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2.

The right triangle above,  $\cos x = 0.8$ . What is the value of  $\cos y$ ?

A.  $\frac{1}{5}$

B.  $\frac{3}{5}$

C.  $\frac{3}{4}$

D.  $\frac{4}{5}$

**Answer: B**



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3. Right triangle ABC has side lengths 7, 24, and 25. If  $\angle B$  is the second-largest interior angle of the triangle, what is the cosine of  $\angle B$  ?

A.  $\frac{7}{25}$

B.  $\frac{7}{24}$

C.  $\frac{24}{25}$

D.  $\frac{25}{24}$

**Answer: A**



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4. If the longer leg of a right triangle has length 32 centimeters, and the measure of the angle that is adjacent to that leg is  $30^\circ$ , which

of the following represents the length, in centimeters , of the hypotenuse of the triangle?

A.  $32 \times \sin 30^\circ$

B.  $32 \times \cos 30^\circ$

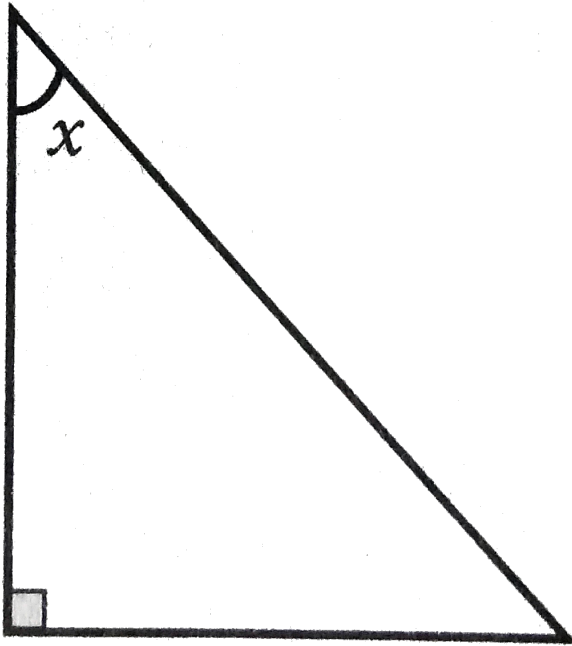
C.  $\frac{32}{\sin 30^\circ}$

D.  $\frac{32}{\cos 30^\circ}$

**Answer: D**



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5.

In the triangle above,  $\tan x = \frac{\sqrt{7}}{3}$ . What is

$\cos x$ ?

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

B.  $\frac{\sqrt{2}}{3}$

C.  $\frac{3\sqrt{2}}{2}$

D.  $\frac{3}{4}$

**Answer: D**



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6. If  $\frac{\cos t}{\cos t} = \frac{1}{3}$ , then what is  $\tan t$ ?

A.  $\frac{1}{3}$

B.  $\frac{\sqrt{3}}{3}$

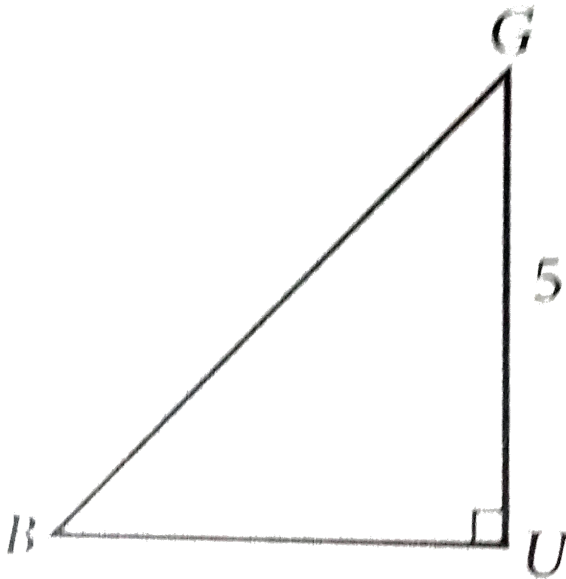
C.  $\sqrt{3}$



D.3

Answer: D

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Triangle BUG shown is an isosceles right

triangle. If the length of side UG is 5 units, what is the sine of  $\angle G$ ?

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

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

C.  $\frac{\sqrt{3}}{2}$

D. 1

**Answer: B**



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8. In a right triangle, one angle measure  $x^\circ$ , where  $\sin x^\circ = \frac{5}{15}$ . What is  $\cos(90^\circ - x^\circ)$ ?

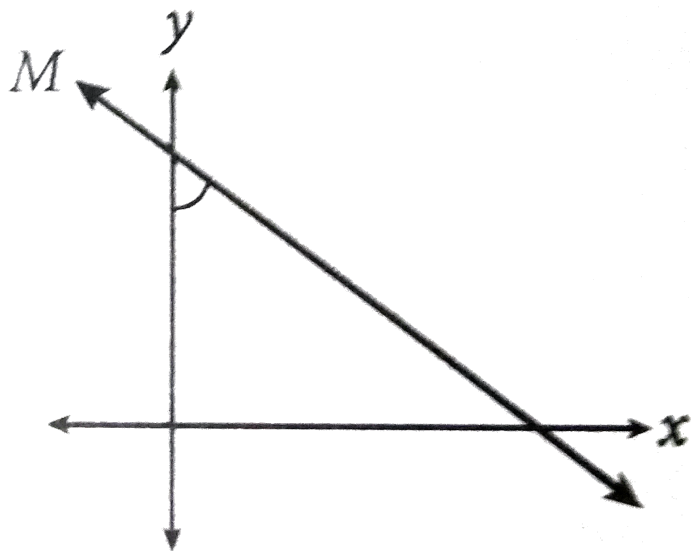


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9. The angles of a triangle are in the ratio 1:2:3. What is the sine of the smallest angle?



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10. \_\_\_\_\_

The equation of line  $M$  shown above is

$y = -\frac{3}{4}x + 5$ . Given that angle  $A$  is the

acute angle formed by the intersection of line

$M$  and the  $y$ -axis, which expression could be

used to find the measure of angle  $A$ ?

A.  $\cos A = \frac{3}{4}$

$$\text{B. } \sin A = \frac{4}{3}$$

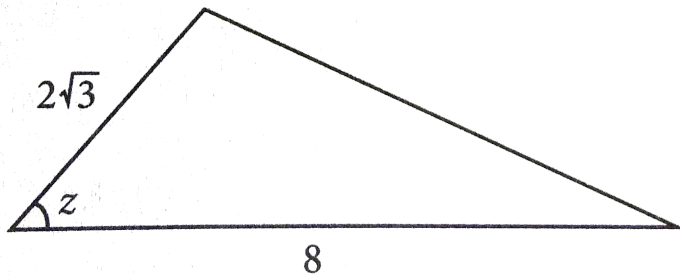
$$\text{C. } \tan A = \frac{4}{3}$$

$$\text{D. } \cos A = \frac{4}{5}$$

**Answer: C**



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11.

If the area of the triangle shown above is 12 squares inches, what is the value of  $\cos z$ ?

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

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

C.  $\frac{\sqrt{3}}{2}$

D. 1

**Answer: A**



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**12.** In triangle  $XYZ$  (not shown), the measure of  $\angle Y$  is  $90^\circ$ ,  $YZ = 12$ , and  $XZ = 15$ .

Triangle  $HJK$  is similar to triangle  $XYZ$ , where vertices  $H$ ,  $J$ , and  $K$  corresponds ot vertices  $X$ ,  $Y$ , and  $Z$ , respectively, and each side of triangle  $HJK$  is  $\frac{1}{5}$  the length of the corresponding side of triangle  $XYZ$ . What is the value of  $\tan K$ ?



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