

Trigonometric functions

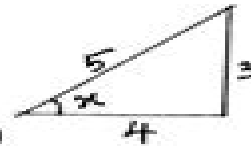
ANSWER KEY TEST - 02

1. a) Option (ii) $\frac{1}{\sqrt{2}}$

b) $\sin x = \frac{3}{5}$

$\therefore \cos x = -\frac{4}{5}$ (since x is in 2nd quadrant)

$\tan x = -\frac{3}{4}$



1

1
1
1 } 2

3

OR

b)

$$\sin^2 x + \cos^2 x = 1 \Rightarrow \cos^2 x = 1 - \sin^2 x$$

$$\Rightarrow \cos^2 x = 1 - \frac{9}{25} = \frac{25-9}{25}$$

$$\Rightarrow \cos^2 x = \frac{16}{25}$$

$$\Rightarrow \cos x = -\frac{4}{5} \quad (\because x \text{ is in 2nd quadrant})$$

Now, $\tan x = \frac{\sin x}{\cos x} = \frac{3/5}{-4/5}$

$\tan x = -\frac{3}{4}$

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

2. a) Option (i) 1

b) $(\sin x + \cos x)^2 = \sin^2 x + \cos^2 x + 2 \sin x \cos x$
 $= 1 + 2 \sin x \cos x$
 $= 1 + \sin 2x$

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

3

3. a) Option (i) 210

b) $\cos 75^\circ = \cos (45^\circ + 30^\circ)$
 $= \cos 45^\circ \cos 30^\circ - \sin 45^\circ \sin 30^\circ$
 $= \frac{1}{\sqrt{2}} \times \frac{\sqrt{3}}{2} - \frac{1}{\sqrt{2}} \times \frac{1}{2}$
 $= \frac{\sqrt{3}}{2\sqrt{2}} - \frac{1}{2\sqrt{2}}$
 $= \frac{\sqrt{3}-1}{2\sqrt{2}}$

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

3

Plato Answer Key Trigonometric Functions

A Gutmann



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