Trigonometric Functions - Class XI

Related Questions with Solutions

Questions

Quetion: 01

Find the value of sin(–420°)cos(390°) + cos(–660°) sin(330°)

A. 1

B. -1

C. $-\frac{1}{2}$

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

Solutions

Solution: 01

$$\begin{aligned}\sin(-420^\circ) &= -\sin(420^\circ)\\ &= -\sin(360^\circ + 60^\circ)\\ &= -\sin 60^\circ = -\frac{\sqrt{3}}{2}\\ \cos(390^\circ) &= \cos(360^\circ + 30^\circ)\\ &= \cos 30^\circ = \frac{\sqrt{3}}{2}\\ \cos(-660^\circ) &= \cos(660^\circ)\\ &= \cos(720^\circ - 60^\circ)\\ &= \cos 60^\circ\\ &= \frac{1}{2}\\ &\sin(330^\circ)\\ &= \sin(360^\circ - 30^\circ)\\ &= -\sin(30^\circ)\\ &= -\tfrac{1}{2}\end{aligned}$$

$$\begin{aligned}&\sin(-420^\circ)\cos(390^\circ) + \cos(-660^\circ)\sin(330^\circ)\\ &= \left(-\frac{\sqrt{3}}{2}\right)\left(\frac{\sqrt{3}}{2}\right) + \left(\frac{1}{2}\right)\left(-\frac{1}{2}\right)\\ &= -\frac{3}{4} - \frac{1}{4} = -1\end{aligned}$$

Correct Options

Answer:01

Correct Options: B