

Question Bank

- Q.1 Show that:
$$\frac{\sin A + \sin 5A + \sin 9A}{\cos A + \cos 5A + \cos 9A} = \tan(5A)$$
- Q.2 Find the co-ordinate of the orthocentre of the triangle whose vertices are $(2, -1)$, $(0, 0)$ and $(-1, 3)$
- Q.3 Find the sum to 'n' terms: $2 + 22 + 222 \dots$
- Q.4 If $z_1 = 3 + 2i$ and $z_2 = 2 + i$, show the following on the Argand diagram:
- z_1
 - z_2
 - $z_1 \cdot z_2$
 - z_1 / z_2
- Q.5 Find the co-ordinates of circumcentre of the triangle whose vertices are $A(-2, 3)$, $B(6, -1)$ and $C(4, 3)$.
- Q.6 Show that $\sin 20^\circ \cdot \sin 40^\circ \cdot \sin 60^\circ \cdot \sin 80^\circ = \frac{3}{16}$
- Q.7 If α and β are cube roots of unity, prove that: $(1 - \alpha)(1 - \beta)(1 - \alpha^2)(1 - \beta^2) = 9$