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# MATHS

## BOOKS - CENGAGE

# TRIGNOMETRIC RATIOS IDENTITIES AND TRIGNOMETRIC EQUATIONS

Question Bank

1. The number of solution (s) of the equation

$$\sqrt{2} + \cos 2x = (\sin x + \cos x) \in \left[ -\frac{\pi}{2}, \pi \right]$$



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2. Find the number of pairs of integer  $(x, y)$  that satisfy the following two equations:

$$\{\cos(xy) = x \tan(xy) = y\}$$

1 (b) 2 (c) 4 (d) 6



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3. If  $\frac{\sin \alpha}{\sin \beta} = \frac{\cos \gamma}{\cos \delta}$ , then  
$$\frac{\sin\left(\frac{\alpha-\beta}{2}\right) \cdot \cos\left(\frac{\alpha+\beta}{2}\right) \cdot \cos \delta}{\sin\left(\frac{\delta-\gamma}{2}\right) \cdot \sin\left(\frac{\delta+\gamma}{2}\right) \cdot \sin \beta}$$



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4. The number of solution (s) of  $\cos \sqrt{3}x + \cos \sqrt{5}x = 2$  is



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