# Trigonometric Functions - Class XI

## Related Questions with Solutions

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## Questions

### Quetion: 01

If $x = r\sin\theta\cos\phi, y = r\sin\theta\sin\phi, z = r\cos\theta$. Then $x^2+y^2+z^2$ is equal to

A. $r^2$

B. $2r^2$

C. $3r^2$

D. $4r^2$

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## Solutions

### Solution: 01

$x = r\sin\theta\cos\phi$

$y = r\sin\theta\sin\phi$

$z = r\cos\theta$

$\Rightarrow x^2 + y^2 = r^2\sin^2\theta\left(\cos^2\phi + \sin^2\phi\right) = r^2\sin^2\theta$

$\Rightarrow x^2 + y^2 + z^2 = r^2\sin^2\theta + r^2\cos^2\theta = r^2$

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## Correct Options

**Answer:01**

**Correct Options: A**