

## Determinants - Class XII

### Related Questions with Solutions

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#### Questions

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##### Question: 01

The value of the determinant  $\begin{vmatrix} 1 & x & x^3 \\ 1 & y & y^3 \\ 1 & z & z^3 \end{vmatrix}$  is equal to

- A.  $(x - y)(y - z)(z - x)$   
B.  $(x - y)(y - z)(z - x)(x + y + z)$   
C.  $(x + y + z)$   
D.  $(x - y)(y - z)(z - x)(xy + yz + zx)$

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#### Solutions

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##### Solution: 01

$$\Delta = \begin{vmatrix} 1 & x & x^3 \\ 1 & y & y^3 \\ 1 & z & z^3 \end{vmatrix} \begin{array}{l} R_1 \rightarrow R_1 - R_2, R_2 \rightarrow R_2 - R_3 \end{array}$$
$$\Delta = \begin{vmatrix} 0 & x - y & (x - y)(x^2 + xy + y^2) \\ 0 & y - z & (y - z)(y^2 + yz + z^2) \\ 1 & z & z^3 \end{vmatrix} = (x - y)(y - z)(z - x)(x + y + z)$$

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#### Correct Options

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Answer:01

Correct Options: B