Related Questions with Solutions

Questions

Quetion: 01

An equilateral triangle has each of its sides of length 6 cm. If
$(x_1, y_1), (x_2, y_2), (x_3, y_3)$ are its vertices, then the value of the determinant
$$\begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}^2 \text{ is equal to}$$
A. 192
B. 243
C. 486
D. 972

Solutions

Solution: 01

Now,
$$\left| \frac{1}{2} \right| \begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix} = 9\sqrt{3} \Rightarrow \begin{vmatrix} x_1 & y_1 & 1 \\ x_2 & y_2 & 1 \\ x_3 & y_3 & 1 \end{vmatrix}^2 = 243 \times 4 = 972$$

Correct Options

Answer:01
Correct Options: D