

দেখুওরা যে,

$$x^2 + y^2 - 2ax + 2by + ab = 0$$

$$\text{আর } x^2 + y^2 + 2bx + 2ay - ab = 0$$

বৃত্ত দুটা লম্বচ্ছেদীয়।

7. (a) (i) Prove that (প্রমাণ করা যে)

$$(\bar{b} \times \bar{c}) \cdot (\bar{a} \times \bar{d}) + (\bar{c} \times \bar{a}) \cdot (\bar{b} \times \bar{d}) + (\bar{a} \times \bar{b}) \cdot (\bar{c} \times \bar{d}) = 0$$

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(ii) Show that (দেখুওরা যে)

$$(\bar{b} + \bar{c}) \cdot \{(\bar{c} + \bar{a}) \times (\bar{a} + \bar{b})\} = 0$$

if (যদি) $\bar{a}, \bar{b}, \bar{c}$ are coplanar (এক সমতলীয়)

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(b) (i) If $\bar{r} = t^2\hat{i} - t\hat{j} + (2t+1)\hat{k}$, find at $t=0$ the values of

$$\frac{d\bar{r}}{dt}, \frac{d^2\bar{r}}{dt^2}, \frac{d^3\bar{r}}{dt^3}, \left| \frac{d\bar{r}}{dt} \right| \text{ and } \left| \frac{d^2\bar{r}}{dt^2} \right|$$

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যদি $\bar{r} = t^2\hat{i} - t\hat{j} + (2t+1)\hat{k}$, $t=0$ ত

$$\frac{d\bar{r}}{dt}, \frac{d^2\bar{r}}{dt^2}, \frac{d^3\bar{r}}{dt^3}, \left| \frac{d\bar{r}}{dt} \right| \text{ আর } \left| \frac{d^2\bar{r}}{dt^2} \right| \text{ ব মান}$$

উলিওরা।