

Subject

موضوع الدرس

Date: / /

الموافق

التاريخ

ex Solve $xq + y^2 p^2 - xy^2 = 0$

$$xq = xy^2 - y^2 p^2$$

$$\Rightarrow xq = y^2(x - p^2)$$

$$\Rightarrow \frac{q}{y^2} = \frac{(x - p^2)}{x} = a$$

$$\Rightarrow \frac{q}{y^2} = a \Rightarrow q = ay^2, F_2$$

$$\frac{x - p^2}{x} = a \Rightarrow x - p^2 = xa$$

$$x - xa = p^2$$

$$p = \sqrt{x(1-a)}, F_1$$

$$z = \int \sqrt{x} \cdot \sqrt{1-a} dx + \int ay^2 dy$$

$$= \sqrt{1-a} \int x^{\frac{1}{2}} dx + a \int y^2 dy$$

$$= \sqrt{1-a} \frac{2}{3} x^{\frac{3}{2}} + a \frac{y^3}{3} + C$$

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ex ① $p - x^2 + q - y^2 = 0$

$$p - x^2 = y^2 - q = a$$

$$p - x^2 = a \Rightarrow p = a + x^2, F_1$$

$$y^2 - q = a \Rightarrow q = y^2 - a, F_2$$

$$z = \int (a + x^2) dx + \int (y^2 - a) dy$$

$$z = ax + \frac{x^3}{3} + \frac{y^3}{3} - ay + C$$