Z.C.2.5.6.

$$(y^2 + xy)dx + x^2 dy = 0$$

$$\frac{dy}{dx} + \frac{y^2}{x^2} + \frac{y}{x} = 0$$

Sätt : $z = \frac{y}{x}$, $y = xz$, $y' = xz' + z.$

$$xz' + z + z^2 + z = 0$$

$$xz' = -z(z+2) \quad \text{Separabel.}$$

a)

$$z = 0 \ , \ z = -2 \ , \ \text{dvs } y = 0 \ , \ y = -2x.$$

b)

$$z \neq 0\ ,\ z \neq -2: \quad \frac{z'}{z(z+2)} = -\frac{1}{x}$$

$$\frac{1}{2}\left(\frac{1}{z} - \frac{1}{z+2}\right)z' = -\frac{1}{x}$$

$$\ln|z| - \ln|z+2| = -2\ln|x| + \ln|C_1|$$

$$\frac{z}{z+2} = \pm\frac{C_1}{x^2} = \frac{C}{x^2}$$

$$C = \frac{x^2\,\frac{y}{x}}{\frac{y}{x}+2} = \frac{x^2 y}{y+2x}$$

$$x^2 y = C(y+2x)$$