CALCUL INTEGRAL ÎN $\mathbb{R}^2$

2. Să se calculeze integralele curbilinii de speța I:

a) $\int_C (x+y)\,dl$, $C: \begin{cases} x = t - \sin t \\ y = 1 - \cos t \end{cases}$ $t \in [0, 2\pi]$

$$(x+y)\,t = (t - \sin t) + (1 - \cos t) =$$

$$= t - \sin t + 2\sin^2 \frac{t}{2}$$

$$\sqrt{x(t)^2 + y(t)^2} = \sqrt{(t - \sin t)^2 + (1 - \cos t)^2}$$

$$= \sqrt{(t - \sin t)^2 + 2\sin^2 \frac{t}{2}} =$$

$$= \sqrt{t^2 - 2t\sin t + \sin^2 t + 2\sin^2 \frac{t}{2}} \ldots ?$$

b) $\int_C xy\,dl$, $C: x^2 + y^2 = 4$.

$$(xy)(t) = x$$