

الدرجة:

الرقم الطائفي:

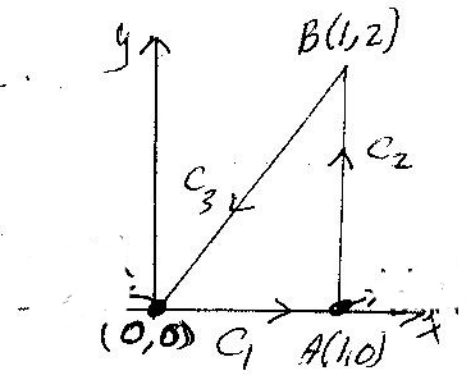
الاسم:

(15)

Q1) Evaluate: $\frac{d}{dt} \left(\frac{dv}{dt} \times \frac{d^2v}{dt^2} \cdot v \right)$ where $v = v(t)$ a vector field

Q2) Find the arc length parametrization of the circle $x^2 + y^2 = 9$ with counterclockwise orientation and $(3, 0)$ as the reference point

Q3) Evaluate: $\int_C (x^2 y dx + x dy)$ in a counterclockwise direction around the triangular path show in the figure.



Q4) Show that the function $f = C e^{-\lambda x} \cos \lambda y$ is harmonic or not. C, λ are constants.