

**Exercise #1:** Evaluate the line integral

$$\int_C \{\sin(xy) + xy \cos(xy)\} dx + x^2 \cos(xy) dy$$

where  $C$  is the curve made up of the segments joining the point  $A(1, 1)$  to  $C(2, 1)$  and the point  $C$  to  $B(3, 2)$ .