

QUESTION 1 (20 MARKS)

Calculate the value of the following integrals.

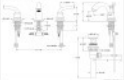


Figure 1: A rectangular region in the xy-plane with vertices at (0,0), (1,0), (1,1), and (0,1). The region is divided into three parts: a triangle with vertices (0,0), (1,0), and (0.5,1); a rectangle with vertices (0,0), (0.5,0), (0.5,1), and (0,1); and another triangle with vertices (0.5,0), (1,0), and (0.5,1). The x-axis is labeled from 0 to 1, and the y-axis is labeled from 0 to 1. The origin is marked with 'O'.