

Math 13 Worksheet #9: Line integrals

- (1) Find the area of a wall whose base is the part of the circle with radius 2 centered at the origin, lying in the first quadrant, and whose height at point (x, y) is given by $f(x, y) = 2x + y$.

- (2) Find $\int_C (x + y + z) ds$, where C is the line segment from $(1, 4, 2\sqrt{3})$ to $(3, 7, 4\sqrt{3})$.

- (3) Evaluate $\int_C xye^{yz} dy$, where $C: x = t, y = t^2, z = t^3, 0 \leq t \leq 1$