

p.1025 (13.1)

Compute the Riemann sum for the given function and region, a partition with n equal-sized rectangles and the given evaluation rule.

5. $f(x, y) = x + 2y^2$, $0 \leq x \leq 2$, $-1 \leq y \leq 1$, $n = 4$, evaluate at midpoint

9. $f(x, y) = 3x - y$, $-1 \leq x \leq 1$, $0 \leq y \leq 4$, $n = 4$, evaluate at midpoint

11. (Image and problem in book)

Evaluate the double integral.

13. $\iint_R (x^2 - 2y) dA$, where $R = \{0 \leq x \leq 2, -1 \leq y \leq 1\}$

15. $\iint_R 4xe^{2y} dA$, where $R = \{2 \leq x \leq 4, 0 \leq y \leq 1\}$

17. $\iint_R (1 - ye^{xy}) dA$, where $R = \{0 \leq x \leq 2, 0 \leq y \leq 3\}$

Sketch the solid whose volume is given by the iterated integral.

20. $\int_0^2 \int_{-1}^1 (2 + x + 2y) dy dx$

21. $\int_0^2 \int_0^3 (x^2 + y^2) dy dx$

Evaluate the iterated integral.

23. $\int_0^1 \int_0^{2x} (x + 2y) dy dx$

27. $\int_0^1 \int_0^{2y} (4x\sqrt{y} + y) dx dy$

29. $\int_0^2 \int_0^{2y} e^{y^2} dx dy$

31. $\int_1^4 \int_0^{1/x} (\cos xy) dy dx$

Find an integral equal to the volume of the solid bounded by the given surface and evaluate the integral.

35. $z = x^2 + y^2$, $z = 0$, $y = 1$, $y = 4$, $x = 0$, $x = 3$

39. $z = 6 - x - y$, $z = 0$, $x = 4 - y^2$, $x = 0$

Change the order of integration.

47. $\int_0^1 \int_0^{2x} f(x, y) dy dx$

Evaluate the iterated integral by first changing the order of integration.

53. $\int_0^2 \int_x^2 2e^{y^2} dy dx$

Sketch the solid whose volume is described by the given iterated integral.

59. $\int_0^3 \int_0^{6-2x} (6-2x-y) dy dx$