

SECTION 15.2

- 15.2.1 Evaluate $\int_0^1 \int_y^1 e^{x^2} dx dy$ by first sketching R then reversing the order of integration.
- 15.2.2 Evaluate $\int_0^1 \int_{x^2}^x (x^2 + y^2) dy dx$ by first sketching R then reversing the order of integration.
- 15.2.3 Evaluate $\int_0^1 \int_0^{2\sqrt{1-y^2}} x dx dy$ by first sketching R then reversing the order of integration.
- 15.2.4 Evaluate $\int_1^2 \int_0^{\sqrt{x}} y \ln x^2 dy dx$.
- 15.2.5 Evaluate $\int_0^1 \int_{2y}^2 \cos(x^2) dx dy$ by expressing it as an equivalent double integral with order of integration reversed.
- 15.2.6 Evaluate $\int_0^1 \int_0^x y\sqrt{x^2 + y^2} dy dx$.
- 15.2.7 Sketch R and express $\int_0^{\pi/4} \int_{\sin x}^{\cos x} f(x, y) dy dx$ as an equivalent double integral with order of integration reversed.
- 15.2.8 Sketch R and express $\int_0^1 \int_{1-y}^{2-y} f(x, y) dx dy$ as an equivalent double integral with order of integration reversed.
- 15.2.9 Use a double integral to find the area enclosed by $y = x^2$ and $y = \sqrt{x}$.
- 15.2.10 Use a double integral to find the area enclosed by $x = y - y^2$ and $x + y = 0$.
- 15.2.11 Find the volume of the solid enclosed by $y = x^2 - x$, $y = x$, and $z = x + 1$.
- 15.2.12 Find the volume of the solid in the first octant enclosed by $y = \frac{x^2}{4}$, $z = 0$, $y = 4$, $x = 0$, and $x - y + 2z = 2$.
- 15.2.13 Find the volume of the solid enclosed by $x = 0$, $z = 0$, $z = 4 - x^2$, $y = 2x$, and $y = 4$.
- 15.2.14 Find the volume of the solid enclosed by $y = x^2 - x + 1$, $y = x + 1$, and $z = x + 1$.
- 15.2.15 Find the volume of the solid that is enclosed by $z = x^2 + y^2$, $y = 2x$, $y = x^2$, and $z = 0$.
- 15.2.16 Find the volume of the solid in the first octant enclosed by $z = 4 - y^2$, $z = 0$, $x = 0$, $y = x$, and $y = 2$.
- 15.2.17 Find the volume of the solid in the first octant enclosed by $x^2 + y^2 = 4$, $y = z$, and $z = 0$.

15.2.18 Find the volume enclosed by $x^2 + y^2 = 1$ and $y^2 + z^2 = 1$.

15.2.19 $\int_0^1 \int_0^x e^{6xy} dy dx =$

15.2.20 $\int_0^5 \int_0^x \sin y dy dx =$

15.2.21 $\int_1^2 \int_0^{\sqrt{x-1}} xy^2 dy dx =$

15.2.22 $\int_0^\pi \int_0^y \sin x \cos 2x dx dy =$

15.2.23 $\int_0^{\pi/2} \int_0^{x^2} x \sin y dy dx =$