PROBLEMS 17.9

In Problems 1–22, evaluate the multiple integrals.

1. $\int_0^3 \int_0^4 x \, dy \, dx$
2. $\int_1^4 \int_0^3 y \, dy \, dx$
3. $\int_0^1 \int_0^1 xy \, dx \, dy$
4. $\int_0^1 \int_0^1 x^2y^2 \, dy \, dx$
5. $\int_1^3 \int_1^2 (x^2 - y) \, dx \, dy$
6. $\int_{-2}^3 \int_0^2 (y^2 - 2xy) \, dy \, dx$
7. $\int_0^1 \int_0^2 (x + y) \, dy \, dx$
8. $\int_0^3 \int_0^x (x^2 + y^2) \, dy \, dx$
9. $\int_2^3 \int_0^{2x} y \, dy \, dx$
10. $\int_1^2 \int_0^{x-1} 2y \, dy \, dx$
11. $\int_0^1 \int_{3x}^{x^2} 14x^2y \, dy \, dx$
12. $\int_0^2 \int_0^{x^2} xy \, dy \, dx$
13. $\int_0^3 \int_0^{\sqrt{9-x^2}} y \, dy \, dx$
14. $\int_0^1 \int_{y^2}^{y} x \, dx \, dy$
15. $\int_{-1}^1 \int_x^{1-x} 3(x + y) \, dy \, dx$
16. $\int_0^3 \int_{y^2}^{3y} 5x \, dx \, dy$
17. $\int_0^1 \int_0^y e^{x+y} \, dx \, dy$
18. $\int_0^1 \int_0^1 e^{y-x} \, dx \, dy$
19. $\int_0^1 \int_0^2 \int_0^3 xy^2z^3 \, dx \, dy \, dz$
20. $\int_0^1 \int_0^x \int_0^{x+y} x^2 \, dz \, dy \, dx$
21. $\int_0^1 \int_{x^2}^x \int_0^{xy} dz \, dy \, dx$
22. $\int_1^e \int_{\ln x}^x \int_0^y dz \, dy \, dx$