

Reversing the order of Integration- HW Problems

Change the order of integration and evaluate the integral both ways.

1. $\int_0^3 \int_{y^2}^9 dx dy$

2. $\int_1^4 \int_0^{\ln(x)} (3x^2 e^y) dy dx$

3. $\int_0^2 \int_{x^2}^{2x} (3y^2) dy dx$

Evaluate by changing the order of integration.

4. $\int_0^1 \int_y^1 (\cos(x^2)) dx dy$

5. $\int_0^1 \int_x^1 (x\sqrt{1+y^3}) dy dx$

6. $\int_0^2 \int_y^2 (e^{-x^2}) dx dy$

7. $\int_0^1 \int_{\sqrt{y}}^1 (\sin(x^3)) dx dy$

8. $\int_0^1 \int_{\tan^{-1} x}^{\frac{\pi}{4}} (\sec^5(y)) dy dx$