

**Activity 9:** Double and Triple Integrals

Names: \_\_\_\_\_ Date: December 7, 2009 Score: \_\_\_\_\_

Show your work or explain your answer for each of the following. Feel free to ask your instructor for advice if you need it.

1. Evaluate

$$\int_0^5 \int_x^5 \exp(y^2) dy dx$$

2. Evaluate

$$\int_{-3}^3 \int_{-\sqrt{9-x^2}}^{\sqrt{9-x^2}} \exp(-x^2 - y^2) dy dx$$

3. Evaluate

$$\int_{-1}^1 \int_{-1}^1 \int_{x-1}^{y+1} xy dz dx dy$$

4. Evaluate

$$\int_{-3}^3 \int_{-\sqrt{9-y^2}}^{\sqrt{9-y^2}} \int_{-\sqrt{9-y^2-z^2}}^{\sqrt{9-y^2-z^2}} (x^2 + y^2 + z^2)^{53/2} dx dz dy$$

5. Evaluate

$$\int_0^{1/\sqrt{2}} \int_x^{\sqrt{1-x^2}} \int_{x^2+y^2-1}^{\sqrt{x^2+y^2}} (x^2 + y^2) dz dy dx$$