Math 001D Assignment 15.2 Ans_____

Instructions: Write complete solutions to the following problems in the space provided. Be sure to supply all the necessary steps that lead to your answers

1. Consider the function $f(x,y) = xy^2$ Ans_____

a. Find $\int_0^1 f(x, y(dx$

b. Find $\int_1^2 f(x,y)dy$ Ans_____

2. Evaluate the double integral Ans_____

$$\int_0^2 \int_0^2 (xy^2 + yx^2)dxdy$$

3. Evaluate the double integral. Ans_____

$$\int_1^3 \int_2^4 \left(\frac{x}{y} + \frac{y}{x}\right)dxdy$$

4. Evaluate $\int_1^2 \int_0^1 2xy\sqrt{x^2+y^2}\,dxdy$ Ans_____

5. Find te volume of the solid that lies under the elliptic paraboloid and above the rectangle Ans_____

$$\frac{x^2}{9}+\frac{y^2}{16}+z=1,\quad \Re:[-1,1]\times[-2,2]$$

6. Find the average value of f over the given rectangle Ans_____

$f(x,y)=4x^2y$, $\Re$ has the vertices $(-1,0),(-1,4),(1,4),(10)$.