MA 227-5D Spring 2003 Test 3

Name _____

1. Evaluate
$$\iiint_M z^2 dV,$$
where M is the region between the spheres $x^2+y^2+z^2 = 9$ and $x^2+y^2+z^2 = 25$, in the upper half-space $z \geq 0$.

2. Evaluate
$$\iint_D (x-y)^{72} e^{x+y} dA,$$
where D is the square with vertices $(1,0)$, $(2,1)$, $(1,2)$, $(0,1)$.

3. Evaluate
$$\iint_R \frac{1}{x+y} dA,$$
where R is the region in the $x, y-$ plane bounded by the lines $x+y = 1$, $x+y = 4$, $y = 0$ and $x = 0$. Use the change of variables $x = u - uv$, $y = uv$.