For full credit, you must <u>show all work neatly</u> and <u>box</u> your final answer.
This Quiz has 3 problems. Please turn page over for other problems.

1. Rewrite the following integral in Cylindrical Coordinates:
   (Hint: It may be useful to sketch the region of integration)

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

2. Now rewrite the integral in Spherical Coordinates:
   (Hint: Again, look at the sketch the region of integration)

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

[Please turn over for additional problem(s)]

3. Compute the given integral over the region displayed below:

$$\int\int_R x + y \; dxdy$$

$\left(-\sqrt{2}, \sqrt{2}\right)$