Due Thursday, Oct. 31, 2013 at the beginning of class.

NAME (print): _____

No credit for unsupported answers will be given. Clearly indicate your final answer. Staple all the sheets.

1. *[6 pts.]* Evaluate $\iiint_E (x + 2y)dV$ if E is bounded by the cylinder $x = y^2$ and the planes $z = 0$ and $x + z = 1$.

2. *[7 pts.]* Use cylindrical coordinates to evaluate $\iiint_E xz\,dV$, where E is bounded by the planes $z = 0$, $z = y$, and the cylinder $x^2 + y^2 = 1$ in the half-space $y \geq 0$.

3. *[7 pts.]* Use spherical coordinates to evaluate $\iiint_E x e^{(x^2+y^2+z^2)^2} \, dV$, where E is the solid that lies between the spheres $x^2 + y^2 + z^2 = 1$ and $x^2 + y^2 + z^2 = 4$ in the first octant.