

Name:  
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MAC 2313.9728  
Cyr

Quiz 11

You must show all work to receive full credit!!

**Problem 1.** (5 points) Rewrite the integral  $\iiint_E \sqrt{x^2 + y^2 + z^2} dV$  in spherical coordinates, where  $E$  lies above the cone  $z = \sqrt{x^2 + y^2}$  and between the spheres  $x^2 + y^2 + z^2 = 1$  and  $x^2 + y^2 + z^2 = 16$ . (Do NOT evaluate.)

**Problem 2.** (5 points) Rewrite the integral  $\iint_D x^2 dA$  by using the transformation  $T(u, v) = (2u, 3v)$ , where  $D$  is the triangular region with vertices  $(0, 0)$ ,  $(2, 0)$ , and  $(2, 3)$ .