

**Quiz #10; Tuesday, date: 04/03/2018**  
**MATH 53 Multivariable Calculus with Stankova**  
**Section #114; time: 2 – 3:30 pm**  
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**Student name:**

1. Use spherical coordinates to evaluate  $\iiint_E z^2 dV$ , where  $E$  is the solid hemisphere  $x^2 + y^2 + z^2 \leq 4$ ,  $y \geq 0$ .
2. *True / False?* The volume of the solid enclosed by  $z = x^2 + y^2 - 1$  and the plane  $z = 0$  is given by

$$\int_{-1}^1 \int_{-\sqrt{1-y^2}}^{\sqrt{1-y^2}} (1 - x^2 - y^2) dx dy$$

3. *True / False?* For a region  $R$ , the integral  $\iint_R dA$  gives the area of  $R$ .