

## MATH 2130 – Tutorial Problems, Thu Apr 5

### Triple Integrals

**Example.** Use cylindrical coordinates to find the volume contained within the surfaces  $x^2 + y^2 + z^2 = 16$  and  $x^2 + y^2 - z^2 = 8$ .

**Example.** Use cylindrical coordinates to find the volume contained within the surface  $x^2 + y^2 = xz$  between  $z = -1$  and  $z = 1$ .

**Example.** Use spherical coordinates to find the volume contained within the surface

$$(x^2 + y^2 + z^2)^{3/4} = \frac{2y}{\sqrt{x^2 + y^2}}.$$