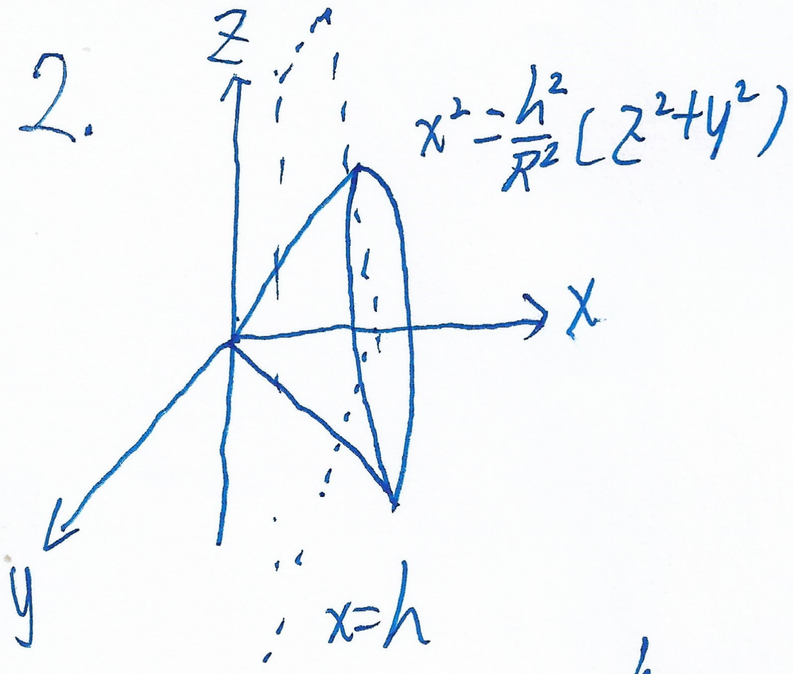
2.



$$\iiint_V x\,dx\,dy\,dz = \int_0^h x\,dx \iint_D dy\,dz = \int_0^h x\,dx\,(\pi R^2 x^2/h^2)$$

$$= \int_0^h \frac{\pi R^2 x^3}{h^2}\,dx = \frac{\pi R^2}{4h^2}x^4\Big|_0^h$$

$$= \frac{1}{4}\pi(hR)^2$$

3. Масса равна $\iiint_V t\,dx\,dy\,dz$

$$\iiint_V t\,dx\,dy\,dz = \iiint_V x+y+z\,dx\,dy\,dz$$

$$= \iint_D dx\,dy \int_0^c ~~t~~\,dz\; x+y+z\,dz$$

$$= \int_0^a dx \int_0^b ~~x~~\; cx+cy+\frac{c^2}{2}\,dy$$

$$= \int_0^a bcx+\frac{b^2c}{2}+\frac{bc^2}{2}\,dx$$

$$= \frac{a^2bc}{2}+\frac{ab^2c}{2}+\frac{abc}{2}$$

$$= \frac{~~1~~}{~~2~~}\,\frac{abc}{2}(a+b+c)$$