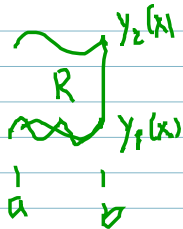
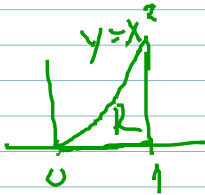


Dobbelintegraller, simple områder



$f(x, y)$

$$\iint_R f(x, y) dA = \int_a^b \int_{y_1(x)}^{y_2(x)} f(x, y) dy dx$$

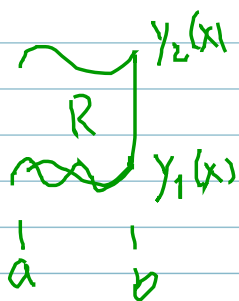


$$\int_0^1 \int_0^{x^2} xy dy dx$$

$$= \int_0^1 \left[x \cdot \frac{1}{2} y^2 \right]_{y=0}^{y=x^2} dx =$$

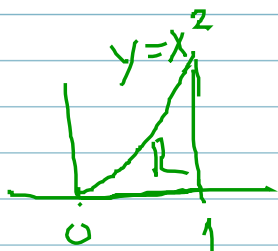
$$\int_0^1 \frac{1}{2} x^5 dx = \left[\frac{1}{2} \cdot \frac{1}{6} x^6 \right]_0^1 = \frac{1}{12}$$

Dobbelintegraller, simple områder



$f(x,y)$

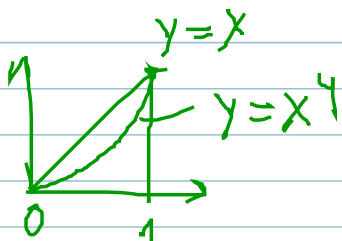
$$\iint_R f(x,y) dA = \int_a^b \int_{y_1(x)}^{y_2(x)} f(x,y) dy dx$$



$$\int_0^1 \int_0^{x^2} xy dy dx$$

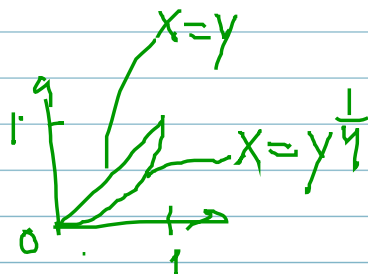
$$= \int_0^1 \left[x \cdot \frac{1}{2} y^2 \right]_{y=0}^{y=x^2} dx =$$

$$\int_0^1 \frac{1}{2} x^5 dx = \left[\frac{1}{2} \cdot \frac{1}{6} x^6 \right]_0^1 = \frac{1}{12}$$



$$\int_0^1 \int_{x^4}^x f(x,y) dy dx$$

$$\int_0^1 \int_{y^4}^y f(x,y) dx dy$$



$$f(x,y) = x-1$$

$$\int_0^1 \int_{x^4}^x f(x,y) dy dx = \int_0^1 \left[y \cdot (x-1) \right]_{y=x^4}^{y=x} dx$$

$$= \int_0^1 x \cdot (x-1) - x^4(x-1) dx$$

$$= \int_0^1 x^2 - x - x^5 + x^4 dx$$