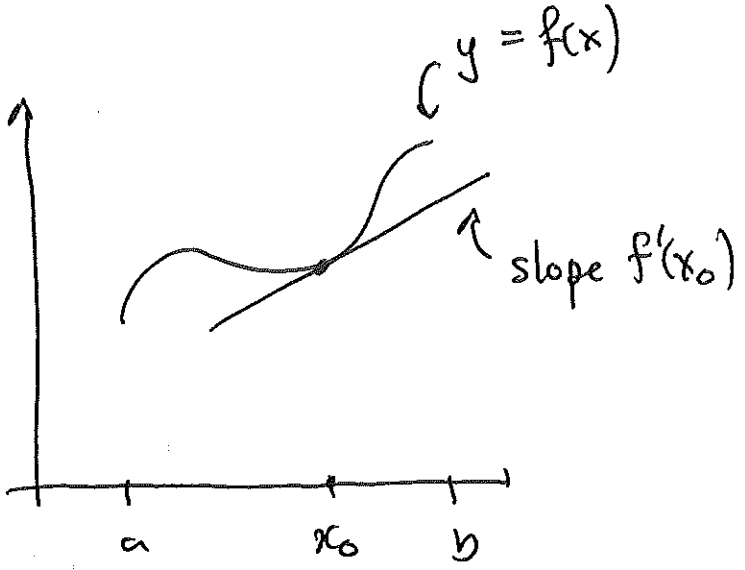
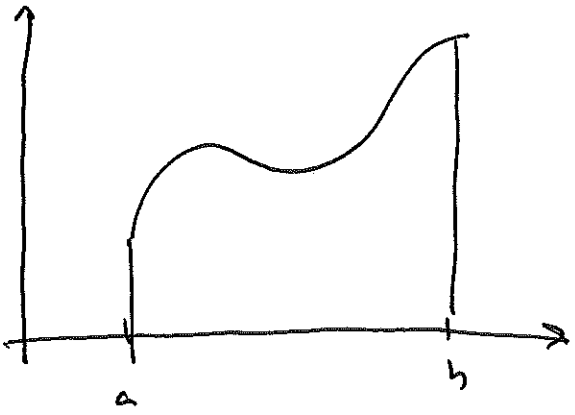


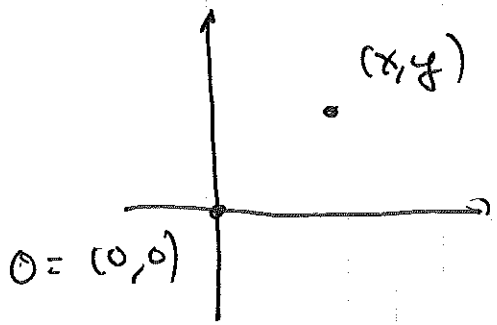


$$\int_a^b f(x)\,dx$$

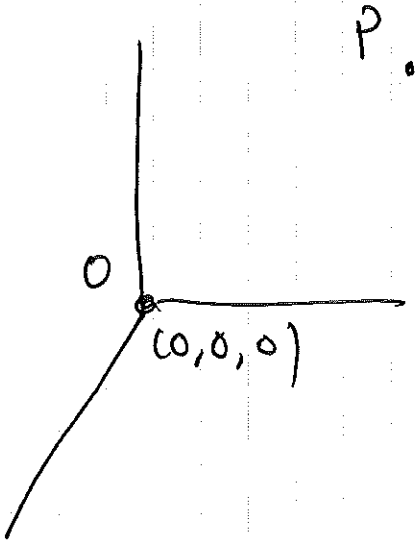
Distance Formula: (2D)

$$\sqrt{(y_2-y_1)^2+(x_2-x_1)^2}$$

Distance from $P_1(x_1, y_1)$ to $P_2(x_2, y_2)$

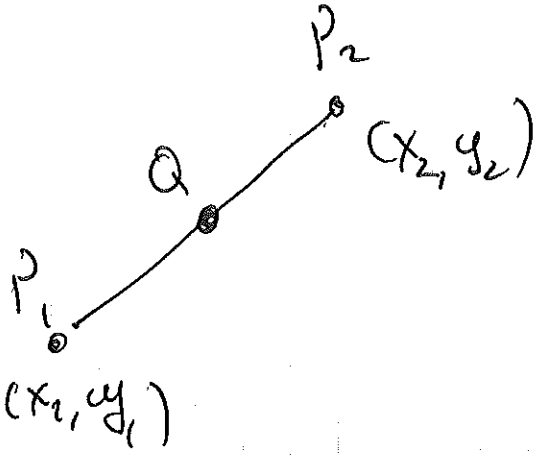


$$|PO| = \sqrt{x^2+y^2}$$



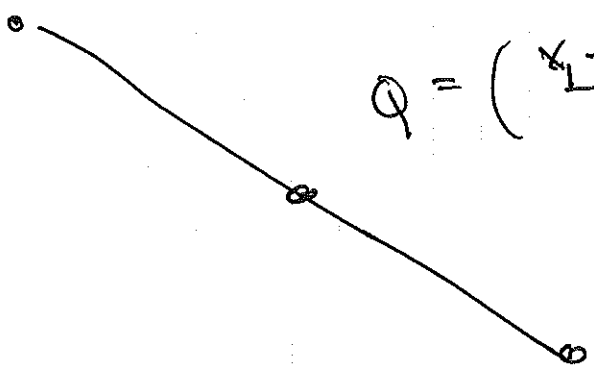
$$|OP| = \sqrt{x^2+y^2+z^2}$$

$$x^2+y^2+z^2=1 \Rightarrow |OP| = 1$$



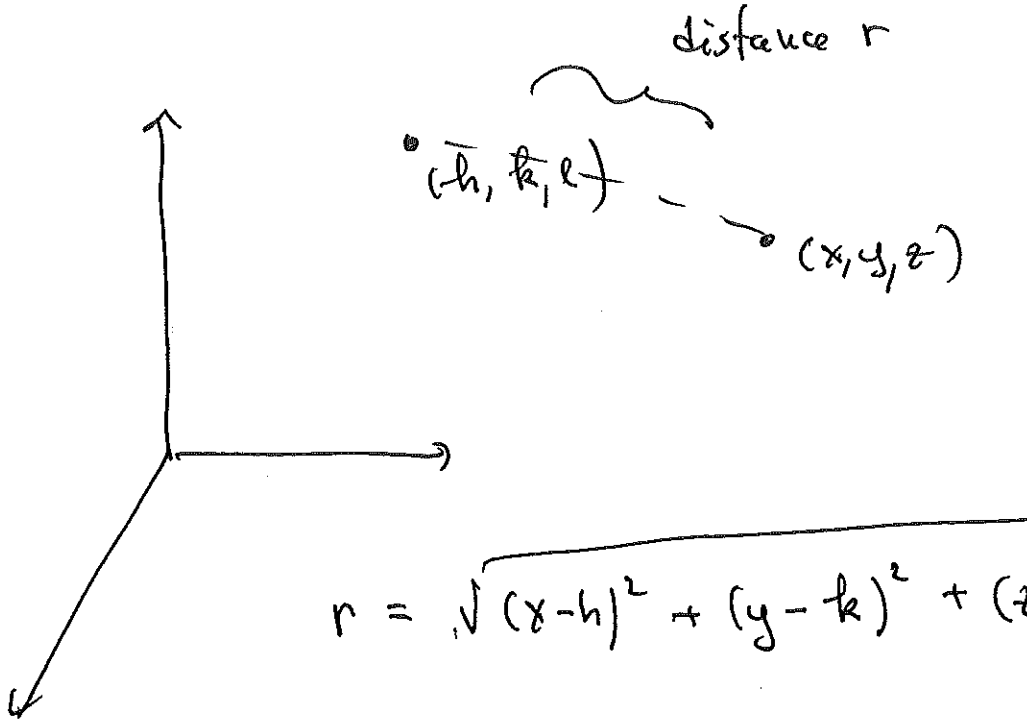
$$Q = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2} \right)$$

$P_1(x_1, y_1, z_1)$



$$Q = \left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}, \frac{z_1 + z_2}{2} \right)$$

$P_2(x_2, y_2, z_2)$



$$r = \sqrt{(x-h)^2 + (y-k)^2 + (z-l)^2}$$

$$r^2 = (x-h)^2 + (y-k)^2 + (z-l)^2$$