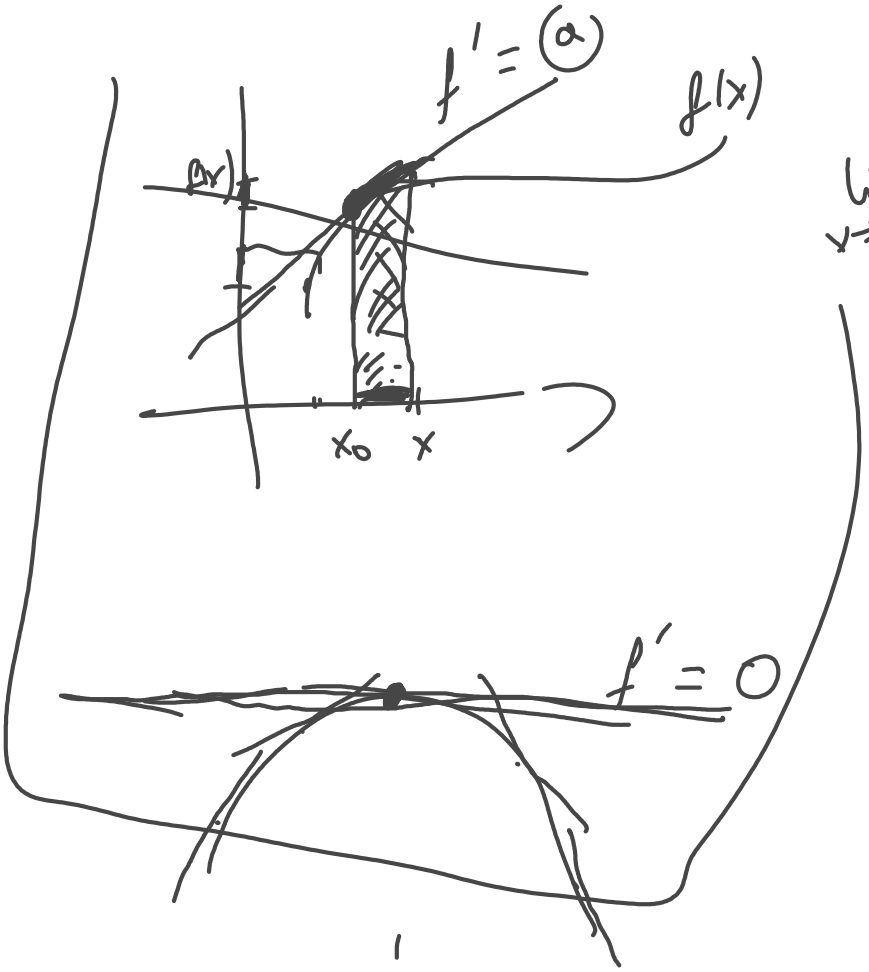
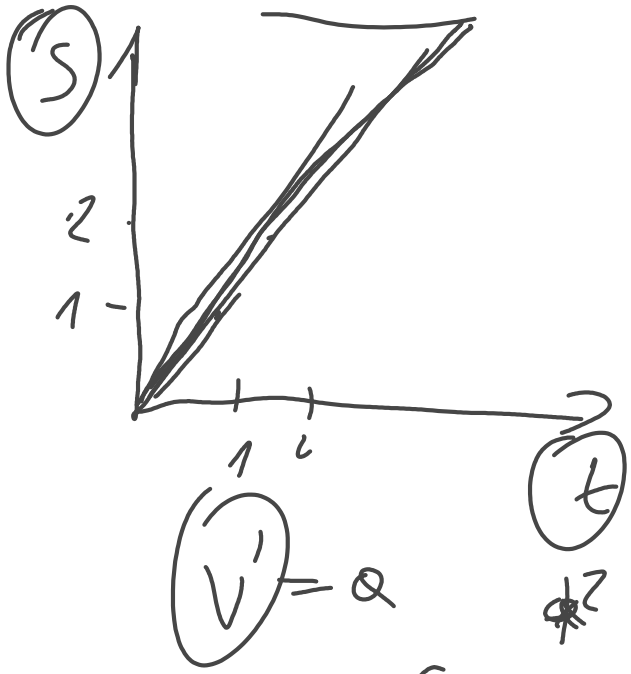
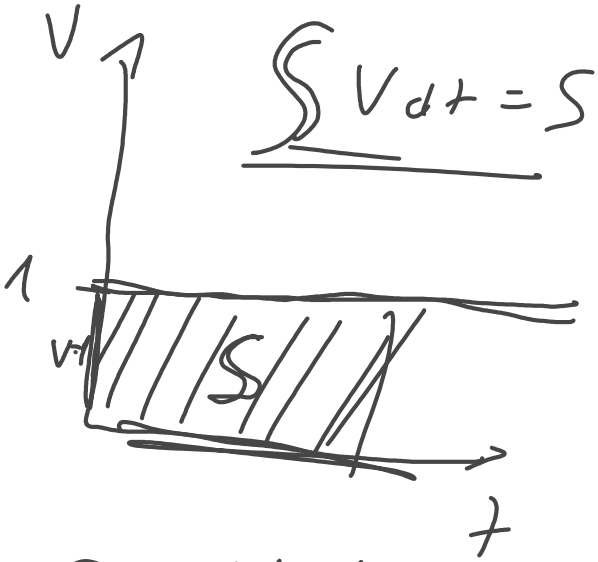


$$\lim_{x \to x_0} \frac{f(x) - f(x_0)}{x - x_0} < 1$$

$f' = 0$

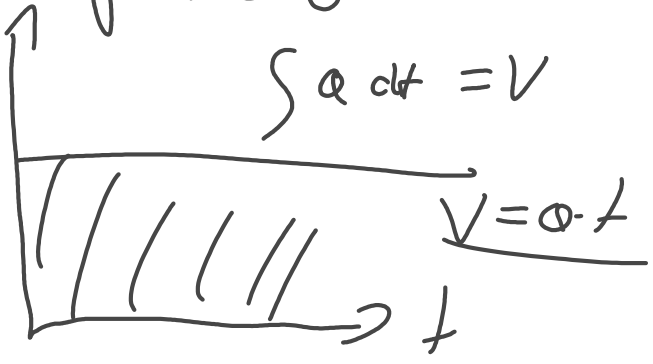
$S' = V$





$$\int V\,dt = S$$

$$S = V \cdot t$$



$$\int x^n \, dx = \frac{x^{n+1}}{n+1}$$

$x^0 = 1$

$$\int x^5 \, dx = \frac{x^6}{6} \qquad \int x \, dx = \frac{x^2}{2}$$

$$\int 3x^2 \, dx = x^3 = \frac{3x^3}{3} \qquad \int 6 \, dx = 6x$$

$$\int x^2 + 2x - 7 \, dx = \frac{x^3}{3} + x^2 - 7x$$

$$\int 6x + 2 \, dx = 3x^2 + 2x$$

$$\int \sqrt{x} - x^{-3} \, dx = \frac{2 \cdot x^{\frac{3}{2}}}{3} + \frac{x^{-2}}{2}$$

$$\int x^{\frac{1}{2}} \, dx = \frac{x^{\frac{1}{2}+1}}{\frac{1}{2}+1} = \frac{x^{\frac{3}{2}}}{\frac{3}{2}} = \frac{2x^{\frac{3}{2}}}{3}$$

$$\int x^{-3} \, dx = \frac{x^{-3+1}}{-3+1} = \frac{x^{-2}}{-2}$$

$$\int \frac{x^7 + 2x^5 - x}{x^1} \, dx = \frac{x^7}{7} + \frac{2x^5}{5} - x$$

$$\int_a^b f(x)\,dx = F(b) - F(a)$$

$$\int_2^6 x+3\,dx = \left[\frac{x^2}{2}+3x\right]_2^6 =$$

$$= \left(\frac{6^2}{2}+3\cdot 6\right) - \left(\frac{2^2}{2}+3\cdot 2\right) =$$

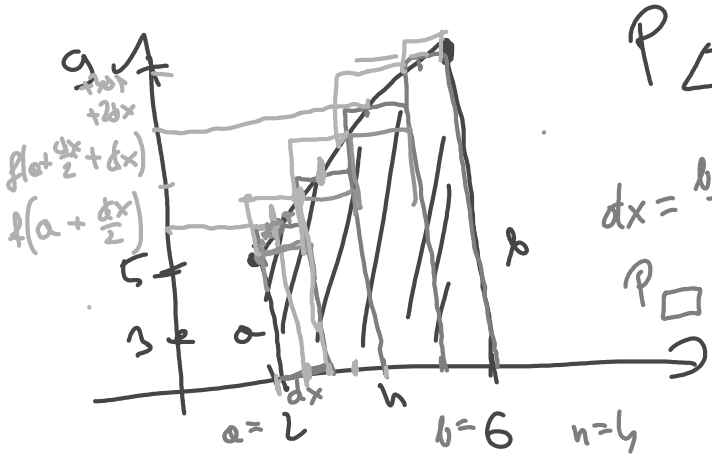
$$= 36 - 8 = 28 \;//$$

---

3) 2D. $y = x+3$ $\langle 2;6\rangle$

$$P_{\text{trapez}} = \frac{a+b}{2}\cdot h = \frac{5+9}{2}\cdot 4 =$$

$$= \frac{14}{2}\cdot 4 = 28 \;//$$



$dx = \frac{b-a}{n} = 1$

$P_{\square} = a\cdot b$

$dx\cdot f(a+\frac{dx}{2}+0\cdot dx$

$+dx\cdot f(a+\frac{dx}{2}+dx)$

$+dx\cdot f(a+\frac{dx}{2}+2\cdot dx)$

$+dx+f(a+\frac{dx}{2}+3dx)$

```
def pro(a, b, n)
    dx = (b-a)/n
    s = 0
    for i in range(n):
        s += dx * f(a + dx/2 + i*dx)
```