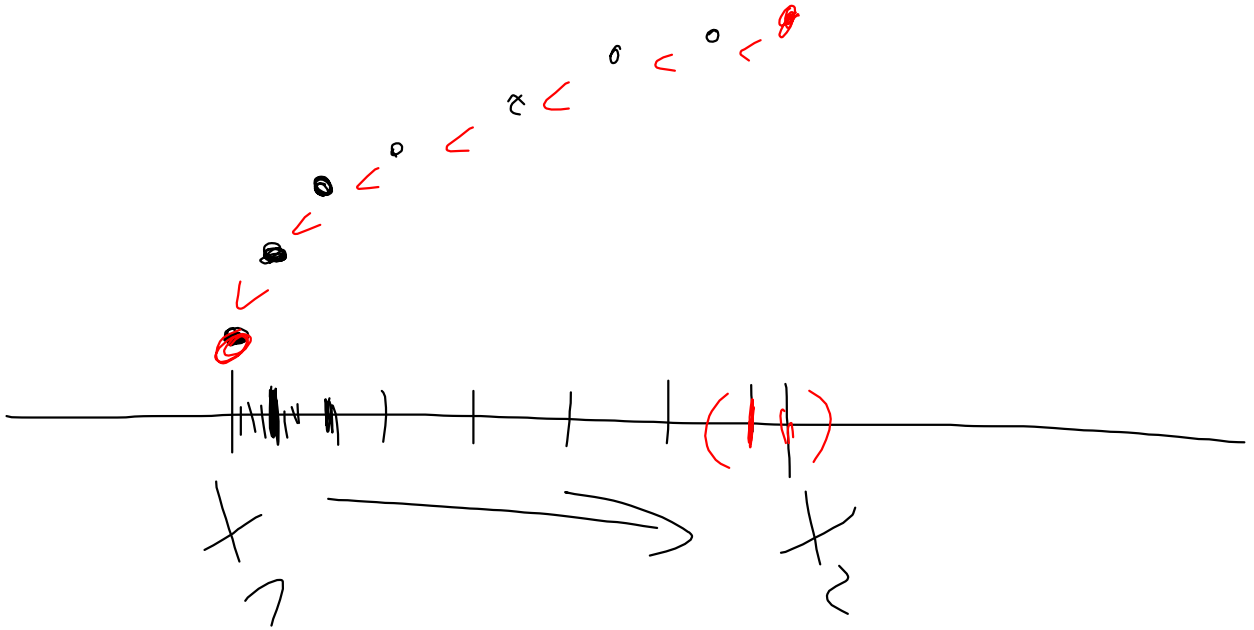
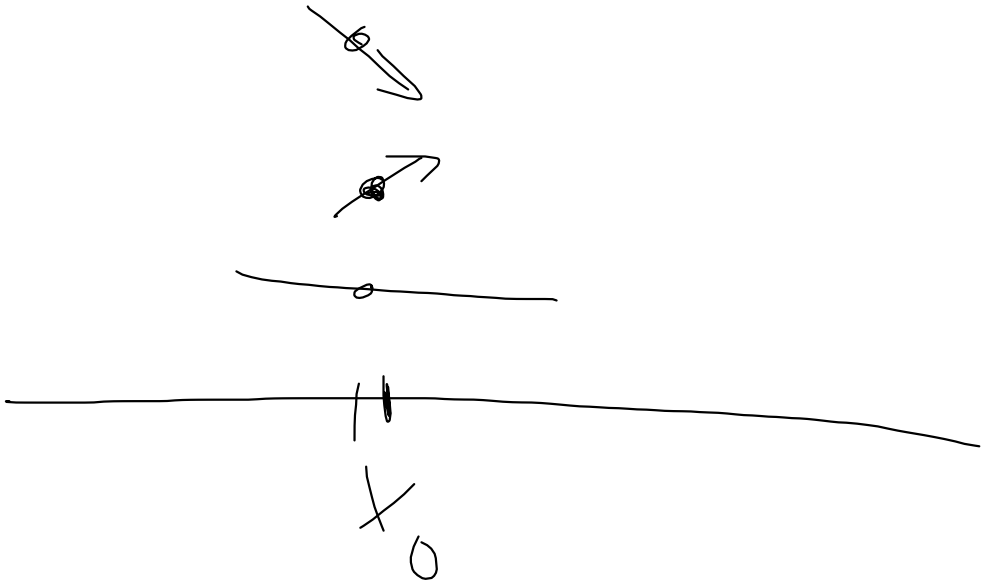
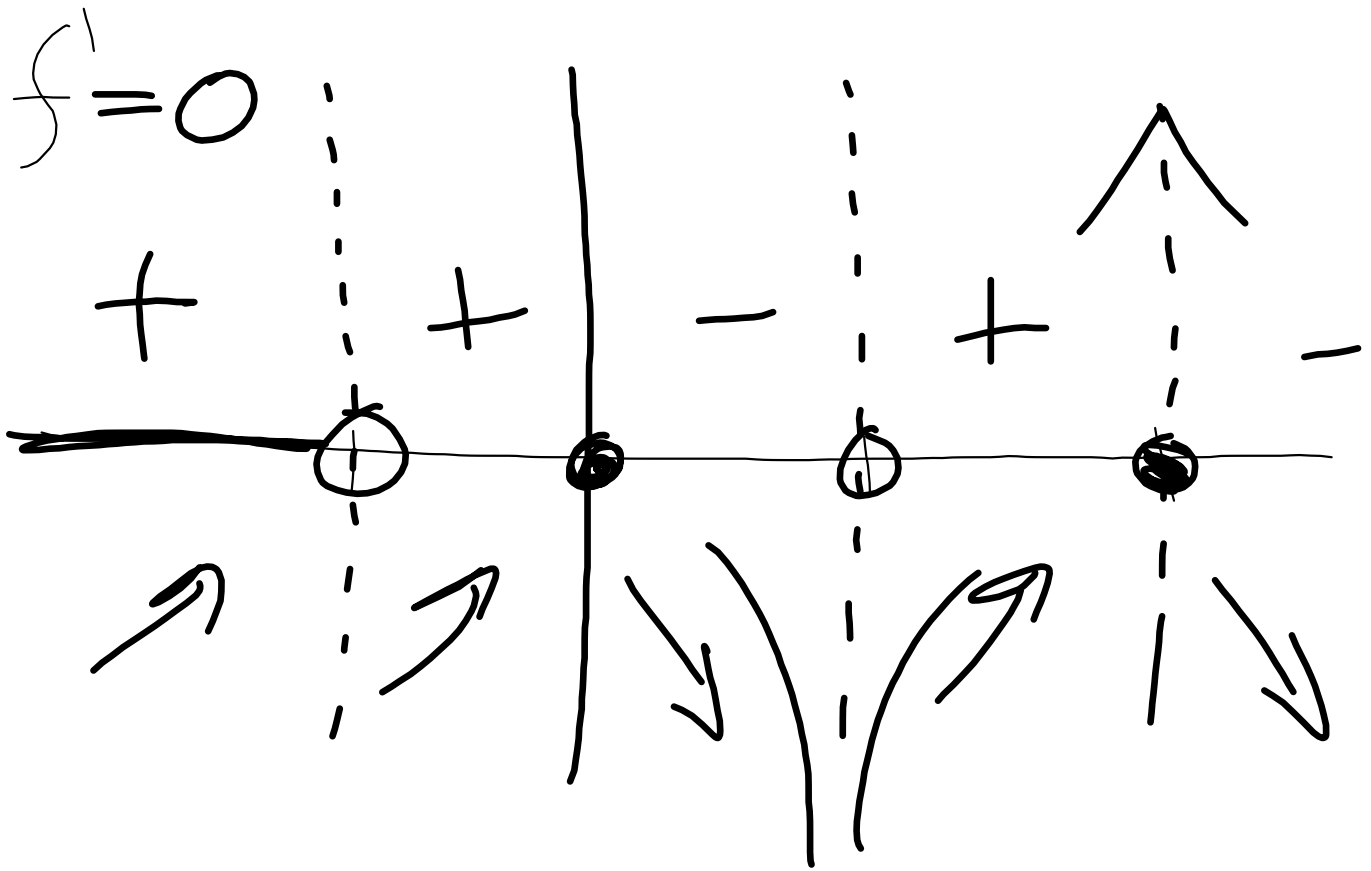
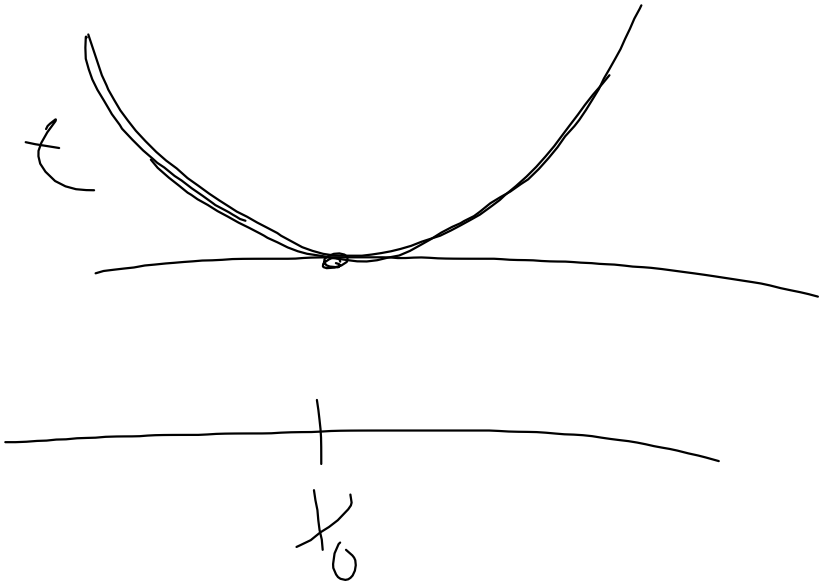
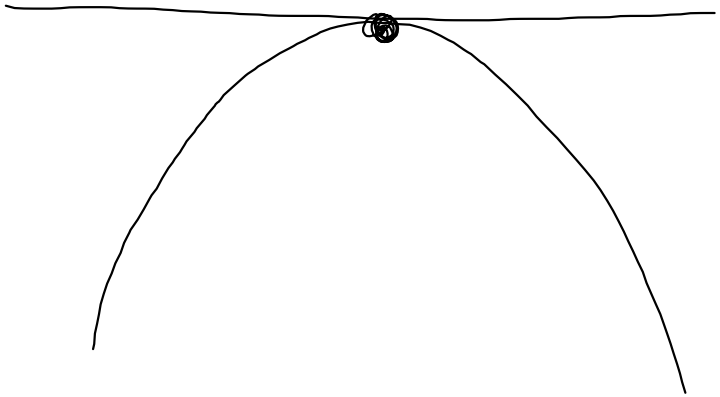
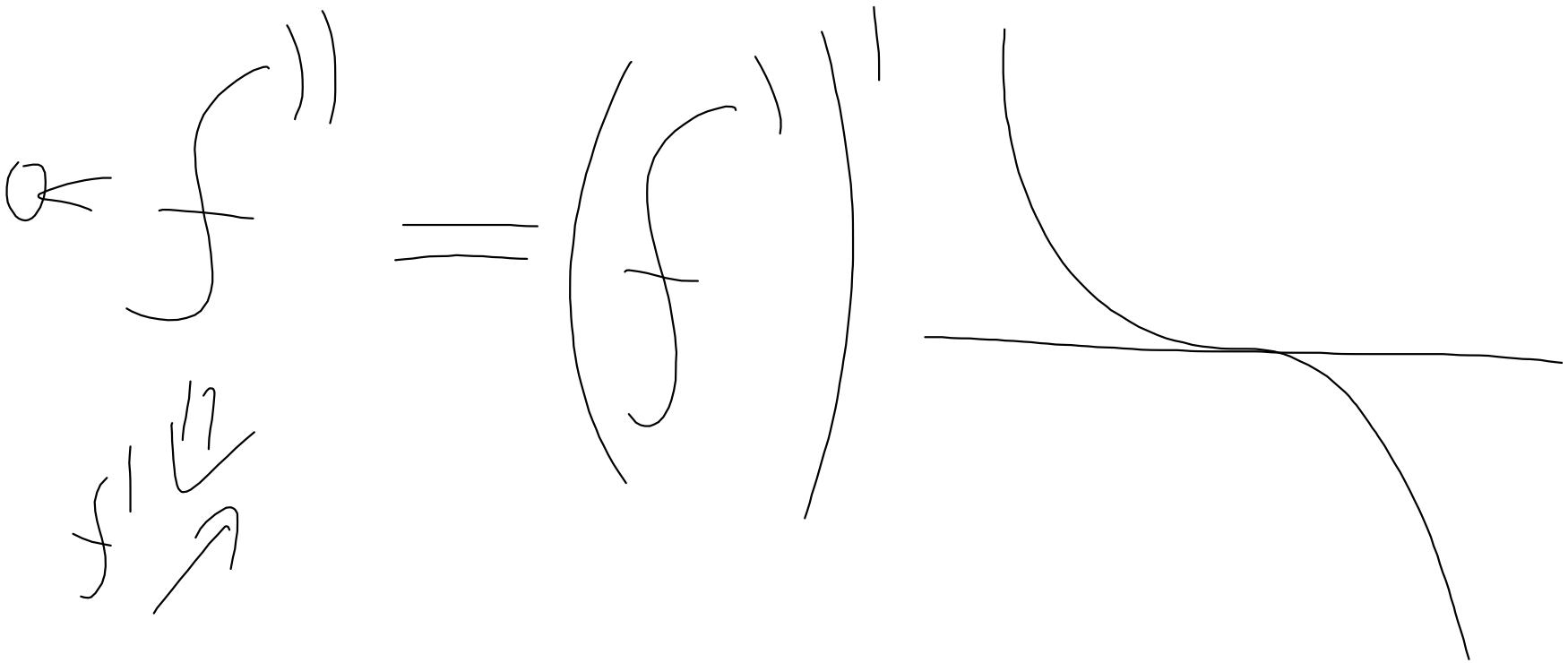


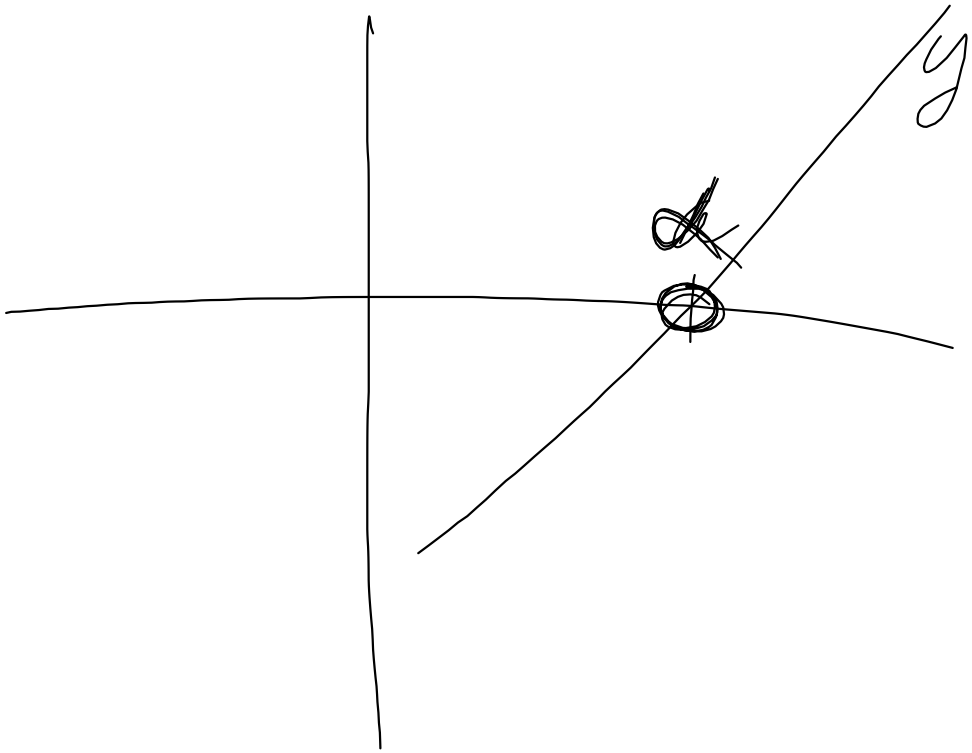



f' = 0
+
+
−
+
−


t
x_0







$y = ax + b = f(x)$

$f(\alpha) = 0$

$f'(x) = a > 0$

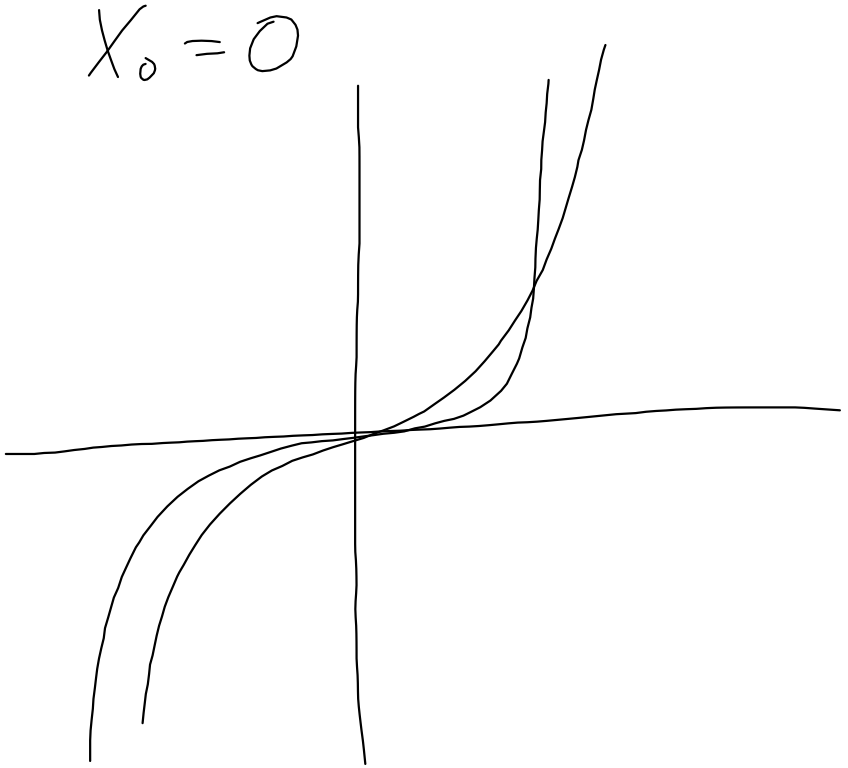
$f(x) = x^3$

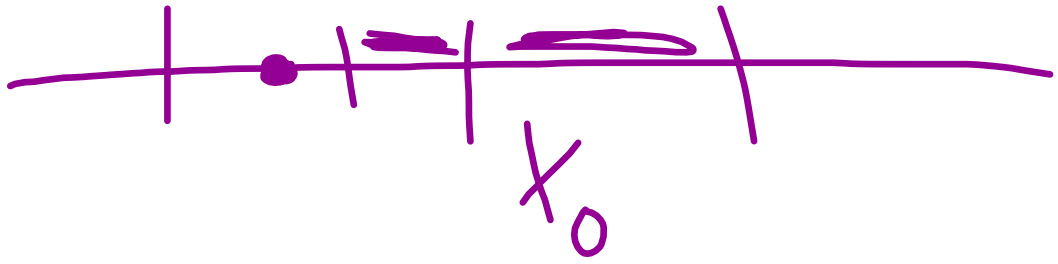
$f'(x) = 3x^2$

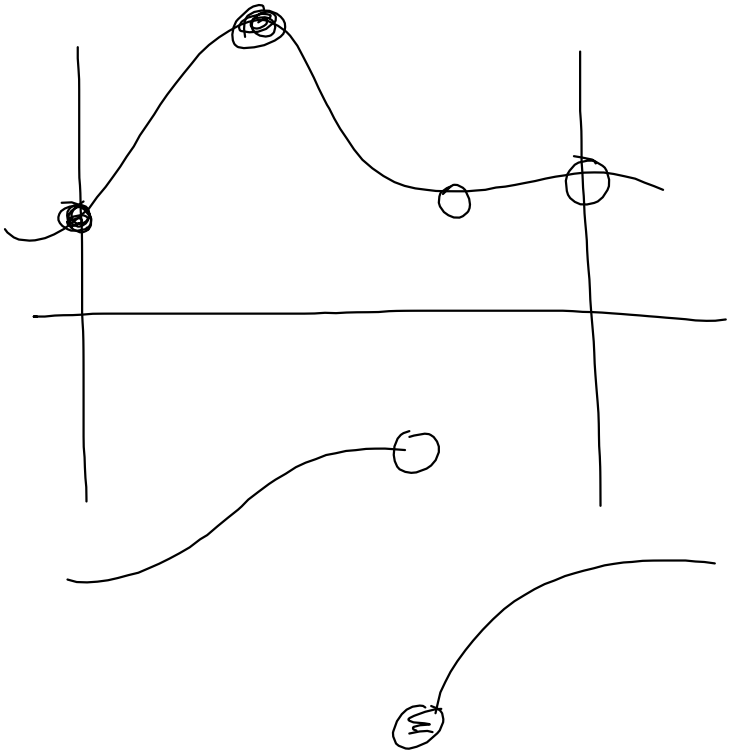
$f''(x) = 6x$

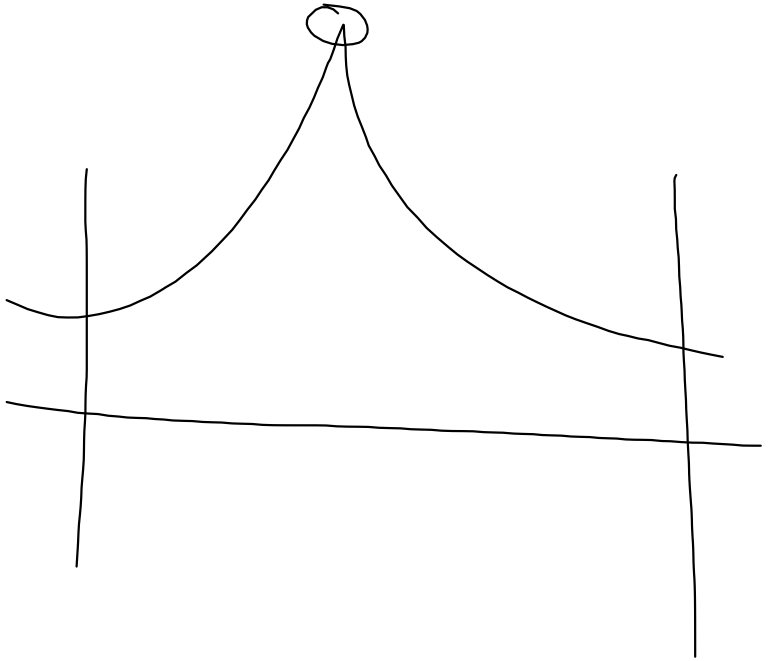
$f'''(x) = 6$

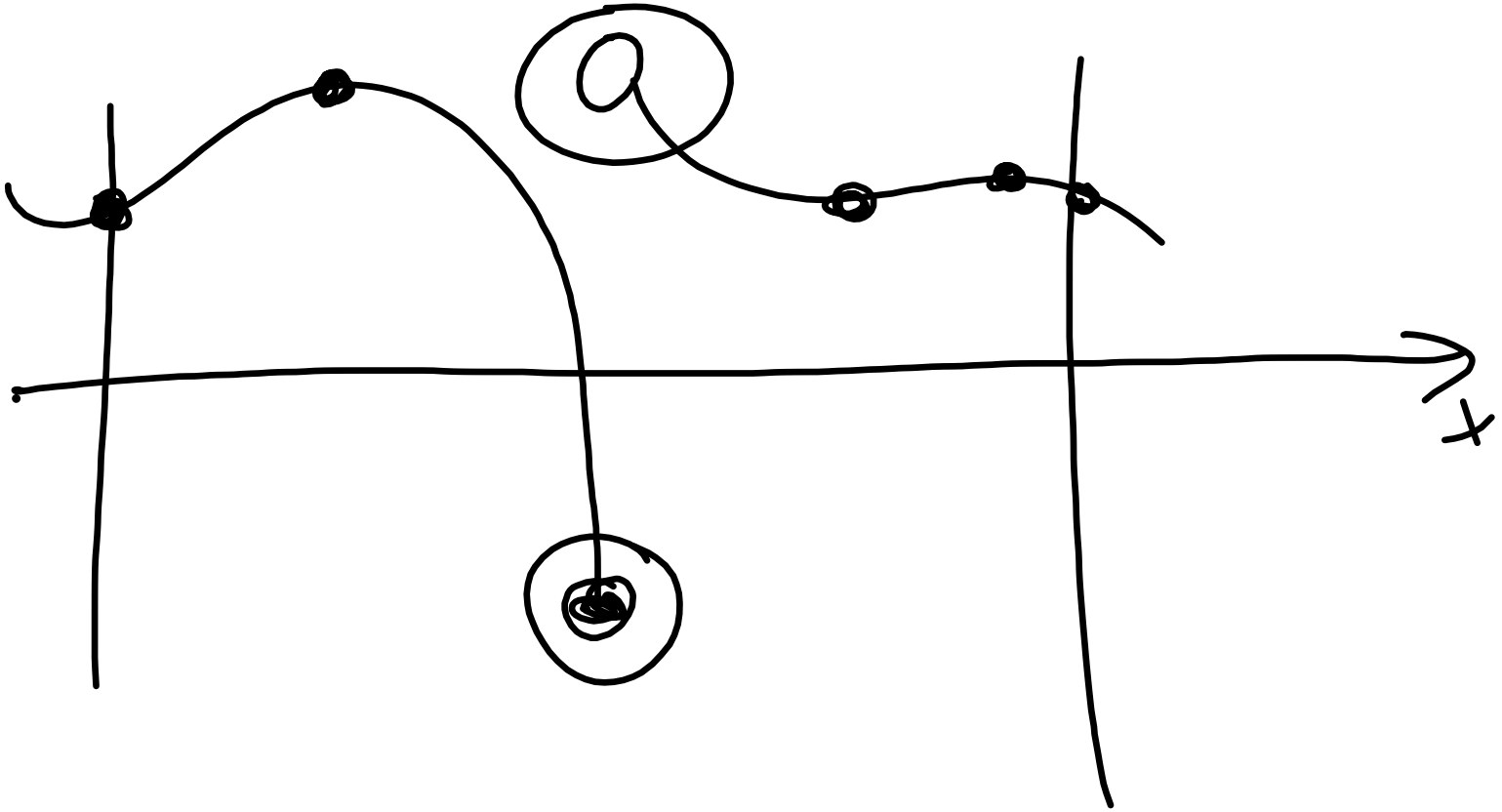
$x_0 = 0$

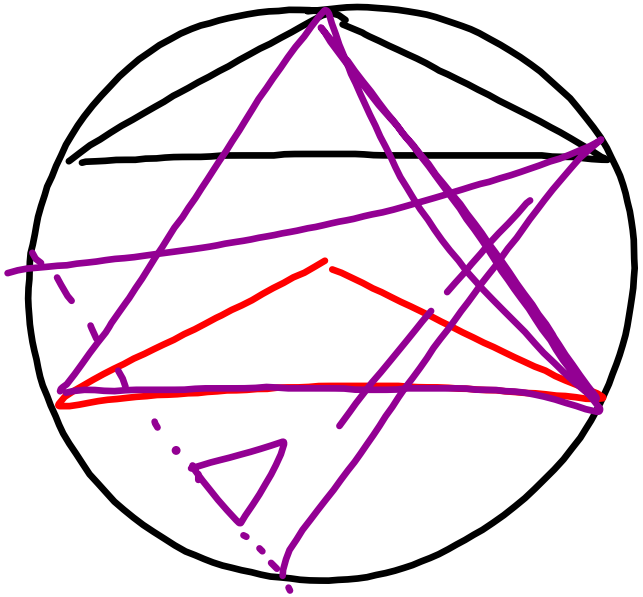


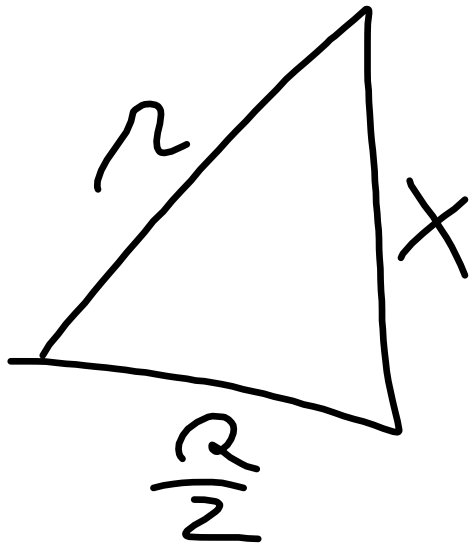

x_0





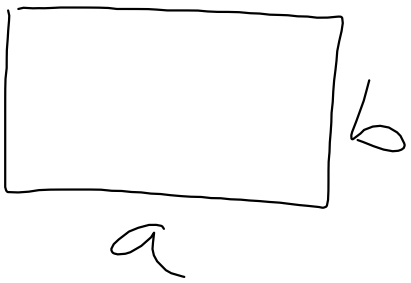

x





$$\left(\frac{r}{2}\right)^2 = r^2 - x^2$$

$$\frac{r}{2} = \sqrt{r^2 - x^2}$$



$O = 100 = 2 \cdot a + 2 \cdot b$

$S = a \cdot b \rightarrow MAX.$

$50 = a + b \Rightarrow b = 50 - a$

$S = a \cdot (50 - a) = S(a) \rightarrow max., a \in [0, 50]$

$S(a) = 50a - a^2$

$S'(a) = 50 - 2a = 0$

$2a = 50$

$a = 25$

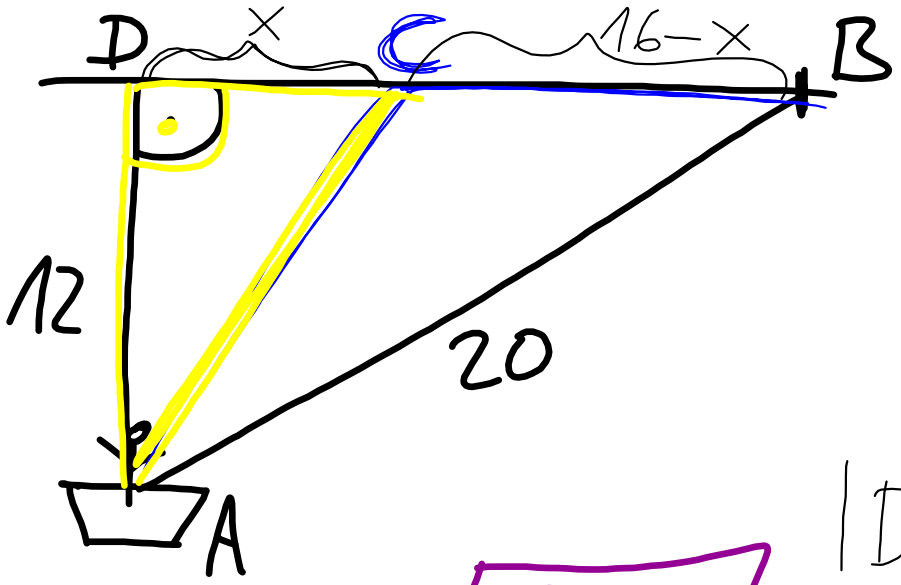
$D(f') = [0; 50]$

$0, 25, 50$

$S(0) = 0, S(50) = 0$

$S(25) = 1250 - 625$

$a = 25, b = 25$



$v_n = 6$

$v_b = 10$

$|DB| = \sqrt{20^2 - 12^2} = 16$

$|AC| = \sqrt{x^2 + 12^2}$

$$t = t_v + t_b = \frac{s_v}{v_v} + \frac{s_b}{v_b} = \boxed{v = \frac{s}{t} \qquad t = \frac{s}{v}}$$

$$= \frac{|AC|}{6} + \frac{16 - x}{10} = \frac{\sqrt{x^2 + 12^2}}{6} + \frac{16 - x}{10} \parallel$$

$$x \in [0, 16] \qquad \downarrow \text{min.} \qquad t(x)$$

$$t'(x) = \frac{1}{6} \cdot \frac{1}{2} \cdot \frac{2x}{\sqrt{144+x^2}} + \frac{1}{10} \cdot (0-1) = 0$$

$$x = \pm 9 \Rightarrow$$

$x = 9$

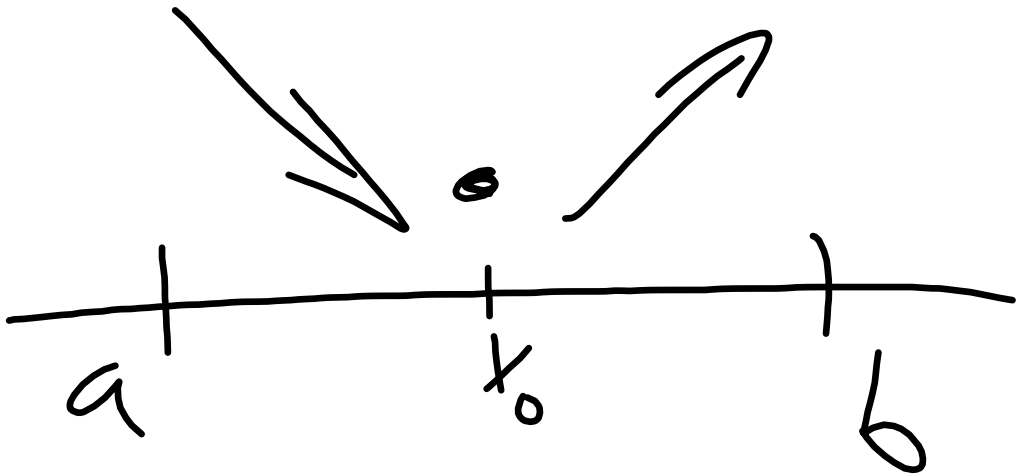
$t(9) = \frac{16}{5}$

$x = 0$

$x = 16$

$t(0) = \frac{18}{5}$

$t(16) = \frac{10}{3}$


a
x_0
b