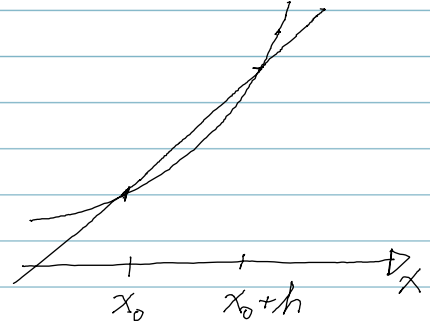
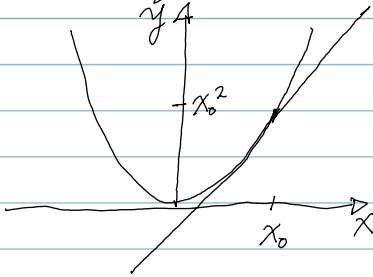


## Öpppgave 2.1=11

Finn likningen till den rätte linjen som  
tangenter kurvan  $y=x^2$  i punktet  $x=x_0$

Lösning:



$$m = \lim_{h \rightarrow 0} \frac{(x_0+h)^2 - x_0^2}{h}$$

$$= \lim_{h \rightarrow 0} \frac{x_0^2 + 2x_0h + h^2 - x_0^2}{h}$$

$$= \lim_{h \rightarrow 0} 2x_0 + h$$

$$= 2x_0$$

Likningen till tangentlinjen blir därmed

$$y = m(x - x_0) + y_0$$

$$= 2x_0(x - x_0) + x_0^2$$

$$= 2x_0x - x_0^2$$