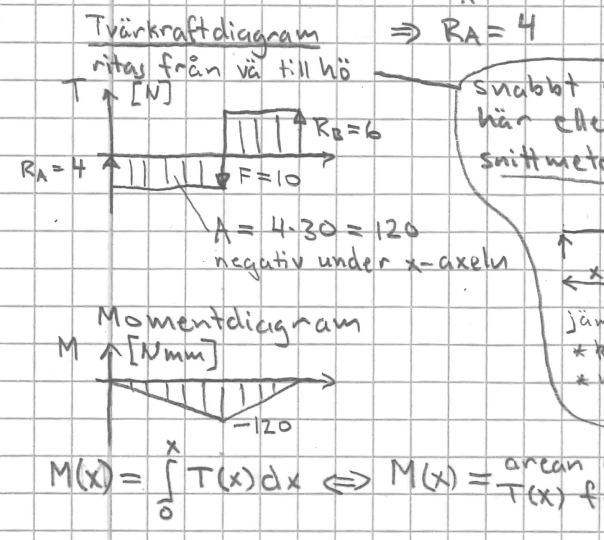
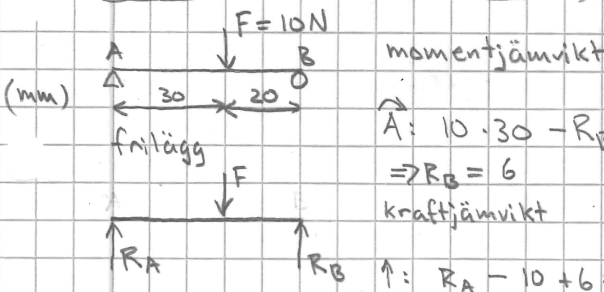
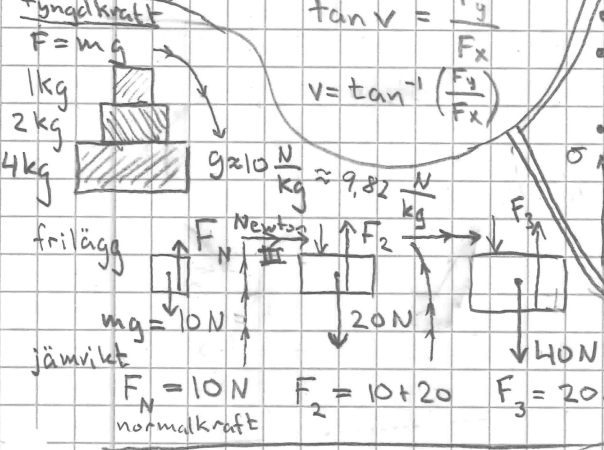
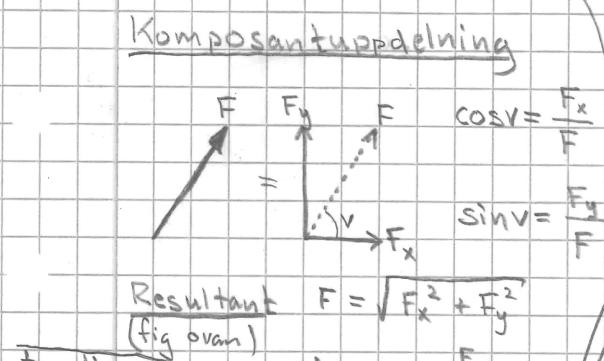
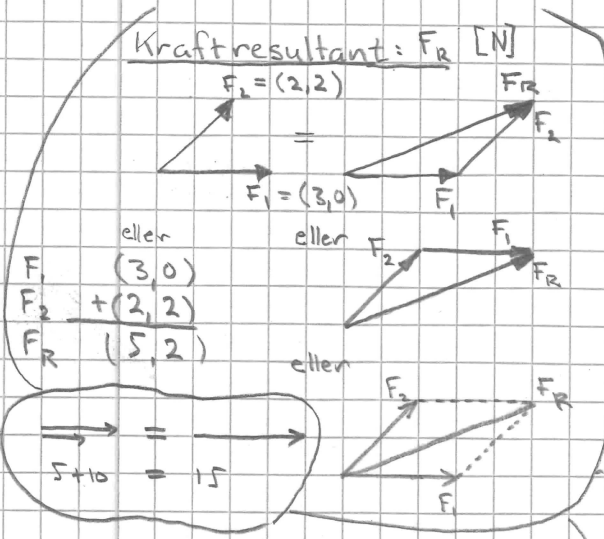


Newton I

$F_R = 0 \Leftrightarrow$ konstant hastighet (storlek och riktning)

Newton II

$F_R = m \cdot a$

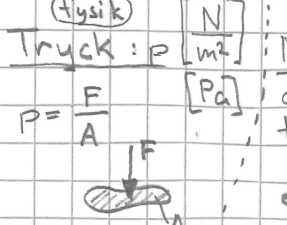
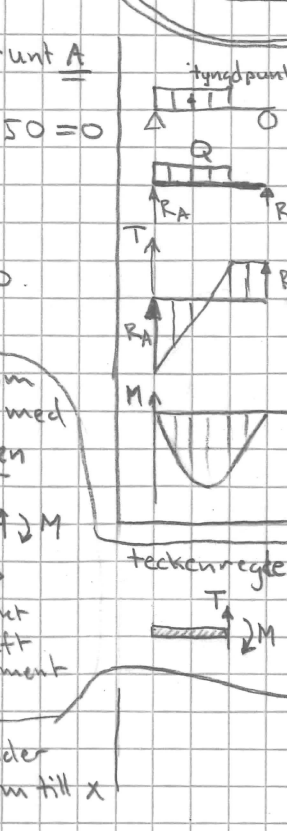
Newton III

kraft och motkraft

- * motsatt riktning
- * verkar på olika föremål
- * av samma typ t.ex. normalkraft

återgår till ursprungslängd

- deformerad
- förlängd då belastning är borta
- materialets struktur ändras



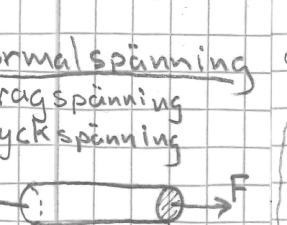
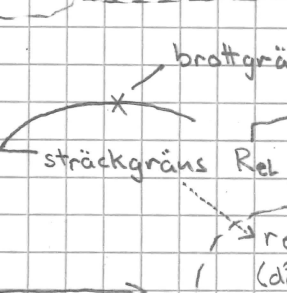
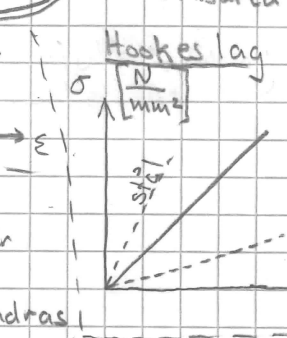
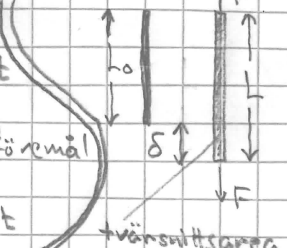
Normalspänning

dragspänning
tryckspänning

$\sigma = \frac{F}{A}$ (1)

Töjning ϵ [-]

$\epsilon = \frac{\delta}{L_0}$ (2)



Klipning

bräytta A

Stansning

stans

bräytta mantelarea A

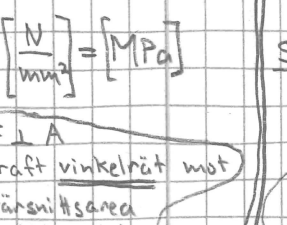
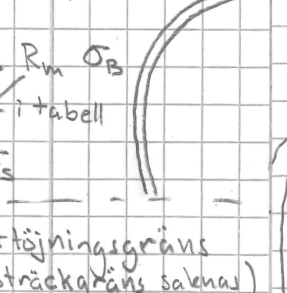
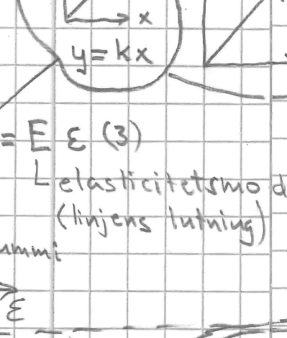
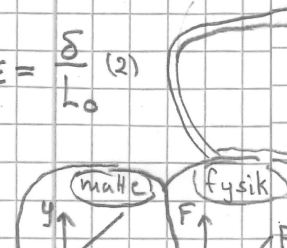
från ovan

från sidan

stansad bit

alt. stansa

minstall



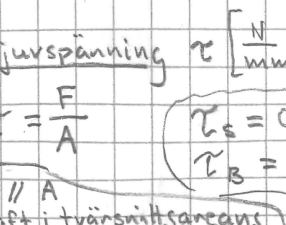
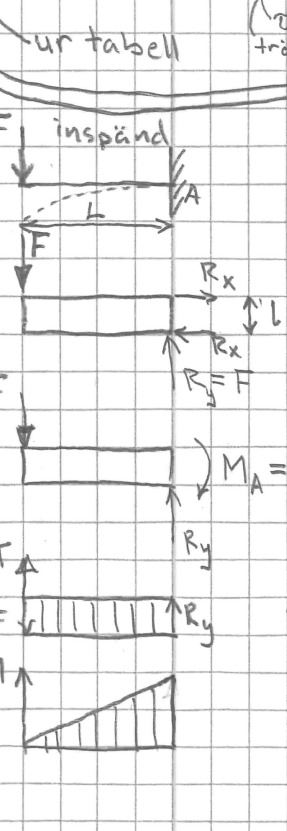
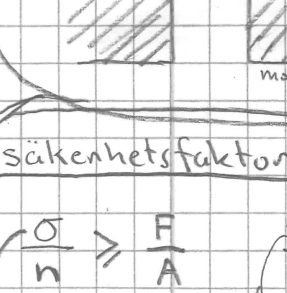
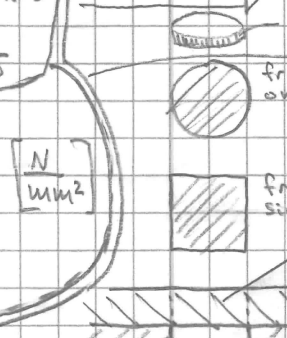
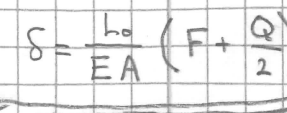
säkerhetsfaktor n

$\frac{\sigma}{n} \geq \frac{F}{A}$

$\frac{\tau}{n} \geq \frac{F}{A}$

ur tabell

$\tau = 0,6 \sigma$ trä i tabell



Överslappsförband

II hälkanttryck σ_h

$\sigma_h = \frac{F}{A}$

$A = d \cdot t$

bekräftad erfarenhet

