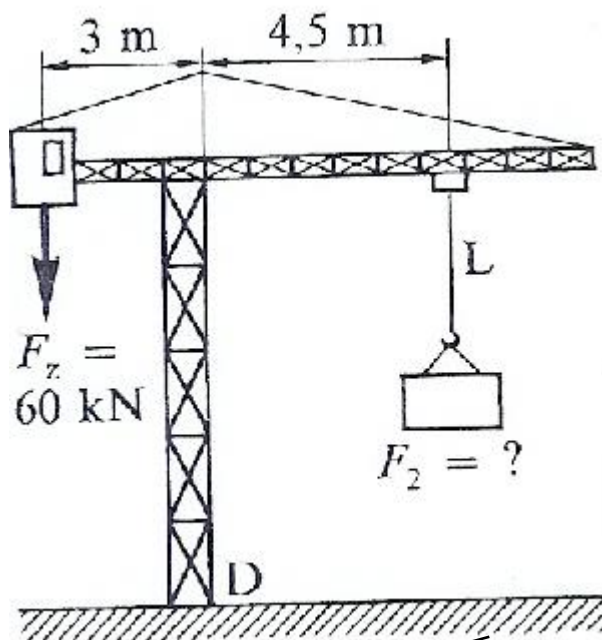




Vitwerking momenten



Het Draaipunt is aangegeven met een pijl

$F_1 = 60 \text{ kN} \dots l_1 = 3 \text{ m}$

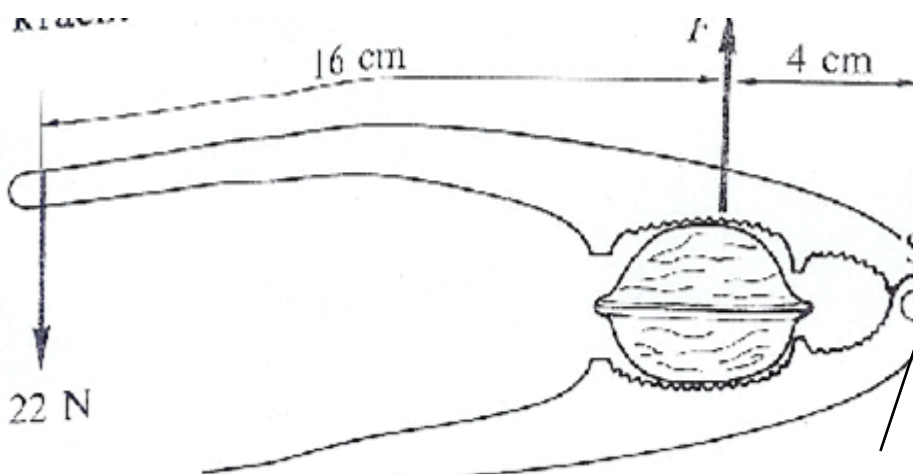
$F_2 = ? \dots l_2 = 4,5 \text{ m}$

$$F_1 \times l_1 = F_2 \times l_2$$

$$60 \text{ kN} \times 3 \text{ m} = F_2 \times 4,5 \text{ m}$$

$$60 \text{ kN} \times 3 \text{ m} = F_2 \times 4,5 \text{ m}$$

F_2 is dan 40 kN



Draaipunt is weer aangegeven.

$F_1 = 22 \text{ N} \dots l_1 = 20 \text{ cm}$

$F_2 = ? \dots l_2 = 4 \text{ cm}$

$$F_1 \times l_1 = F_2 \times l_2$$

$$22 \text{ N} \times 20 \text{ cm} = F_2 \times 4 \text{ cm}$$

$$F = (22 \text{ N} \times 20 \text{ cm}) / 4 \text{ cm}$$

F is dan 110 N

Draaipunt ligt bij het achterwiel.

Kracht is $F_z = 15000 \text{ N}$ ($1 \text{ kg} = 10 \text{ N}$)

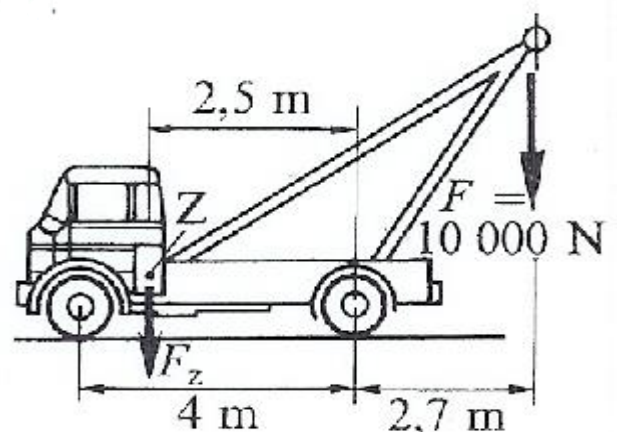
De arm daarvan is 2,5 m

$F = 10000 \text{ N}$ en die arm is 2,7 m

$$15000 \text{ N} \times 2,5 \text{ m} = 10000 \text{ N} \times 2,7 \text{ m}$$

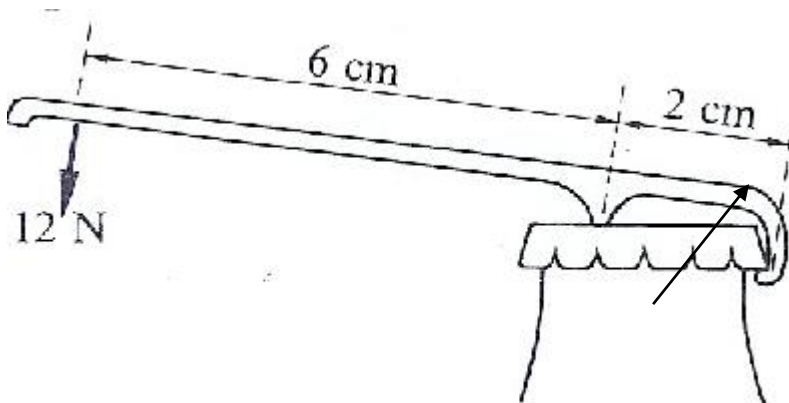
$$37500 \text{ Nm} = 27000 \text{ Nm}$$

Het moment van de zwaartekracht wint het dus NEE



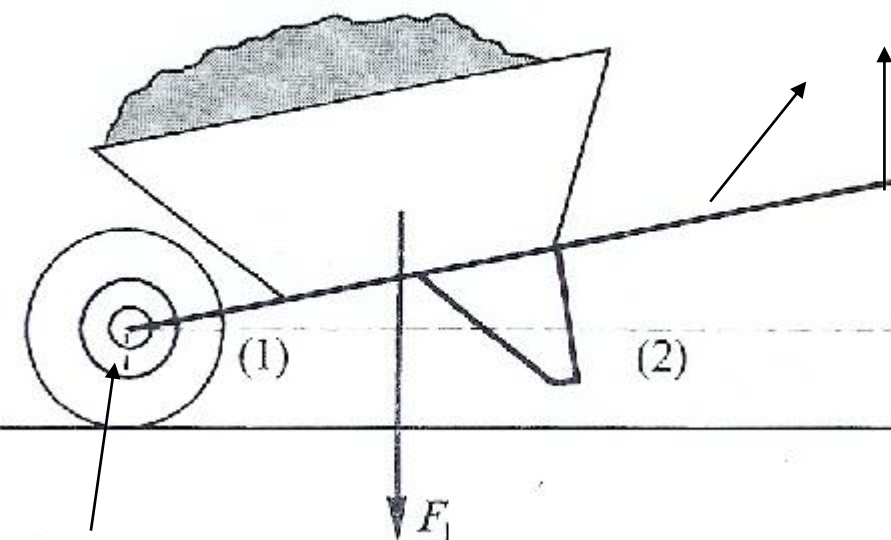


Hok kantelt niet



$$F_1 = 12\text{ N} \quad l_1 = 6\text{ cm} = 0,06\text{ m}$$
$$F_2 = ? \quad l_2 = 2\text{ cm} = 0,02\text{ m}$$

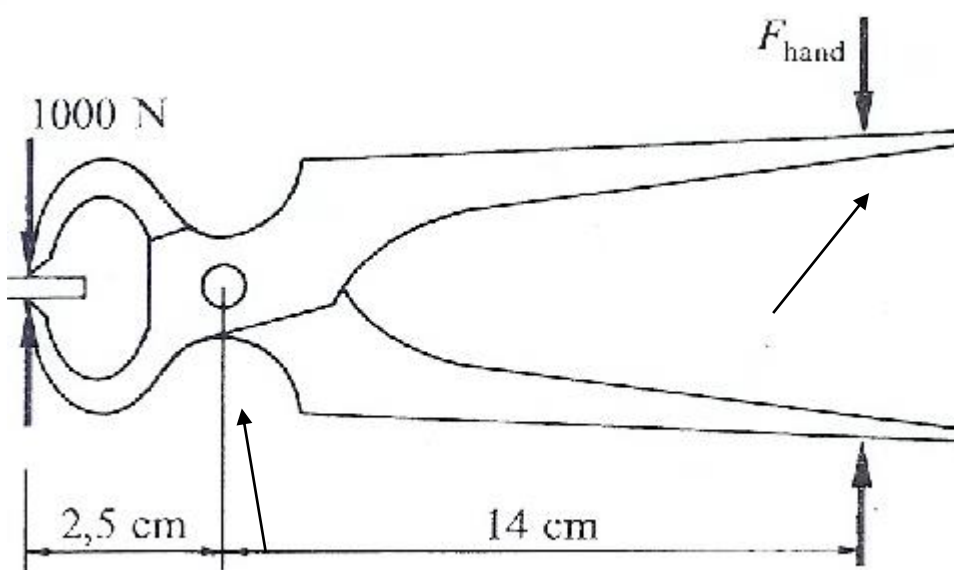
$$F_1 \times d_l = F_r \times d_r$$
$$12\text{ N} \times 0,06\text{ m} = F_r \times 0,02\text{ m}$$
$$F_r = 36\text{ N}$$



$$F_1 = 2000\text{ N} \quad l_1 = 0,6\text{ m}$$

Tilkracht $F_2 = ? \quad l_2 = 1,8\text{ m} !!!$

$$F_r \times d_r = F_l \times d_l$$
$$2000\text{ N} \times 0,6\text{ m} = F \times 1,8\text{ m}$$
$$F_l = 667\text{ N}$$



Draaipunt is weer aangegeven.

$$F_r \times d_r = F_l \times d_l$$
$$1000\text{ N} \times 2,5\text{ cm} = F_{\text{hand}} \times 14\text{ cm}$$

$$F_{\text{hand}} \text{ is dan } 178,6\text{ N}$$