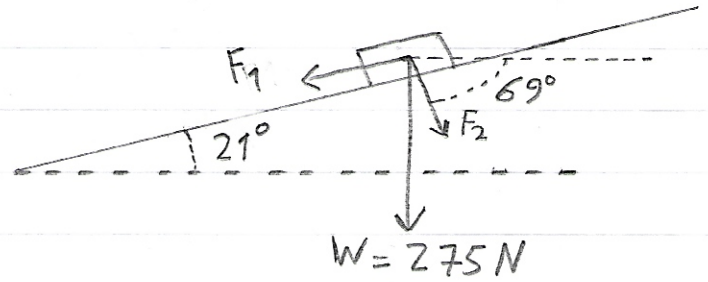
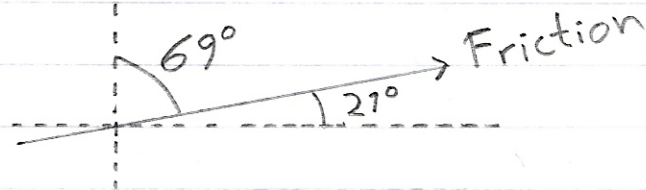


1. a) (i) $90 - 69 = 21^\circ$

$$275 \times \sin(21) = 98.55 \text{ N}$$



(ii) $90 - 21 = 69^\circ$



(iii) $275 \times \cos(21) = 256.73 \text{ N}$

b) (i) $F = ma$

ii $\text{kg} \cdot \text{ms}^{-1}$

c) (i) $m = \frac{275}{9.81} = 28.03 \text{ kg}$

$$F - 98.55 = 28.03 \times 2.5$$

$$F = 168.625 \text{ N}$$

(ii) $\Delta p = 28.03 \times 7.5$
 $= 210.225 \text{ kg} \cdot \text{ms}^{-1}$

(iii) $v = u + at \rightarrow 12.5 = 3.2a \rightarrow a = 3.906 \text{ ms}^{-2}$

$$F = 5 \times 3.906 \rightarrow F = 19.53 \text{ N}$$