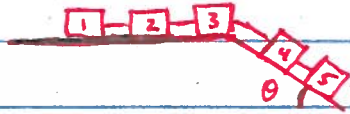


Problem:

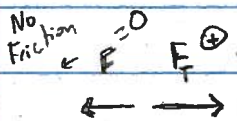


mass of 1-5 :  $m$

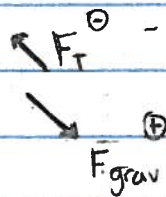
In terms of  $g$ , what is the magnitude of acceleration of block 1?

Attempted Solution

Free body diagram



Blocks (1-3)



Blocks 4-5

4-5

$$F_{\text{net}} = F_{\text{grav}} - F_{1-3} : 2ma = 2mg \sin \theta - F_{1-3}$$

1-3

$$F_{\text{net}} = F_{1-3} : 3ma = F_{1-3}$$

↓

Combine

$$\frac{5ma}{5m} = \frac{2mg \sin \theta}{5m}$$

$$a = \frac{2}{5} g \sin \theta$$