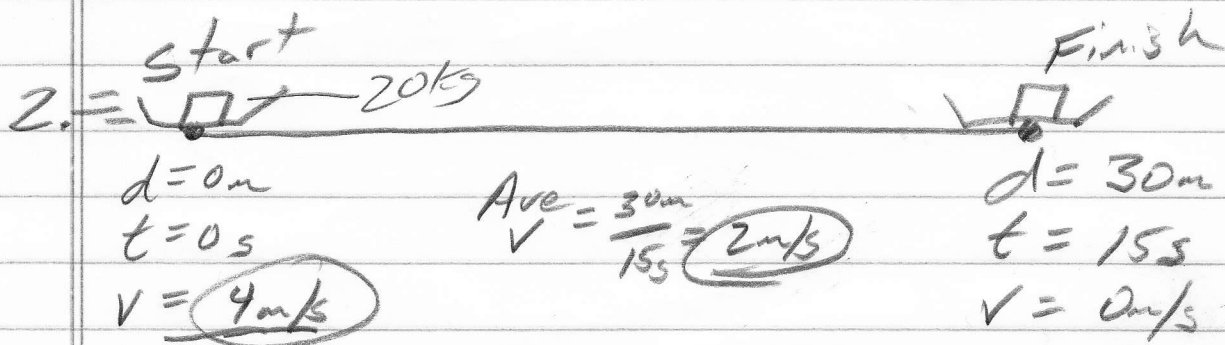


$$a = \frac{\Delta v}{\Delta t} = \frac{5.33m/s}{6s} = 0.88m/s^2$$

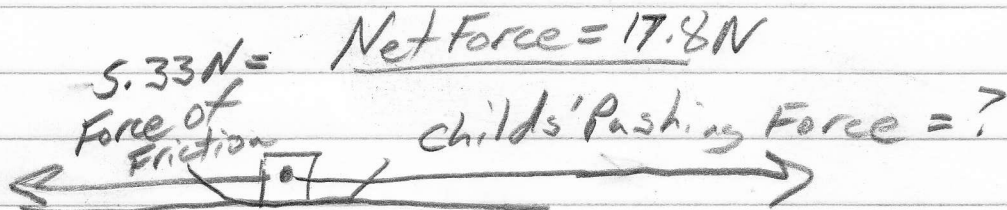
$$F = ma = (20kg)(0.88m/s^2) = 17.8N$$



$$a = \frac{\Delta v}{\Delta t} = \frac{-4m/s}{15s} = -0.27m/s^2$$

$$F = ma = 20kg(-0.27m/s^2) = -5.33N$$

Bonus:



$$\text{Child's Force} - 5.33N = 17.8N$$

$$\text{Child's Force} = 23.1N$$