

Year 11 Physics Formative Test Newton's Laws

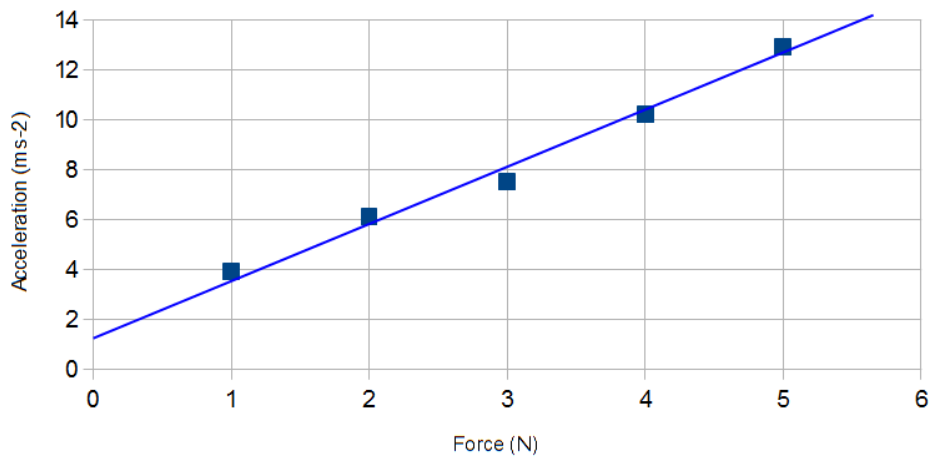
1. (1) Objects stay still or keep moving unless pushed or pulled
(2) Heavier objects are harder to speed up or slow down
(3) Every action has an equal and opposite reaction

2.
 - (a) The speed at which a falling object's weight is canceled by air resistance (friction)
 - (b) Air friction increases with speed. Once the force of friction equals weight, the net force in the skydiver is zero (no acceleration)

3.
 - (a) Zero
 - (b) (any four valid forces *on* the car)

4.
 - (a) 432 N
 - (b) Net force on the student is $432 - 98.1 = 333.9$ N
 $a = F/m = 333.9 / 103 = 3.24 \text{ ms}^{-2}$ to the right

(a) Acceleration against Force



- (b) The graph indicates inaccurate results in that the line of best fit doesn't pass through the origin.
(or shift of the data)
There is probably systematic error present.