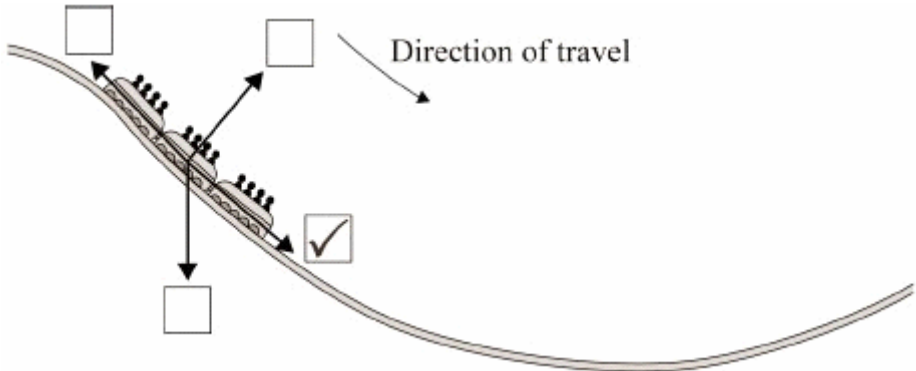


Forces and terminal velocity

Mark scheme

1. (a) gravity
newtons
balanced 3
- each for 1 mark*
- [3]**
2. (a) B 1
more aerodynamic **or** most streamlined shape **or** smaller (surface) area 1
*accept less air/wind resistance **or** less drag **or** less friction clothing
traps less air **or** rolled up into ball **or** arms, legs drawn in
accept converse*
- (b) (i) gravity 1
(ii) air resistance 1
(iii) go up 1
(iv) stays the same 1
- (c) bigger the area, the bigger force Y 1
accept the converse
or bigger the area more drag
accept when the parachute opens then force Y bigger
or bigger the area more air resistance
need the relation of area to force
- [7]**
3. (a) correct box ticked 1
- 
- (b) (i) 30 1
ignore added units
- (ii) 2400 2
*accept their (c)(i) × 80 correctly calculated for both marks
allow 1 mark for correct substitution of their (c)(i) and 80
an answer of 800 gains 1 mark only if answer to (c)(i) is not 10*
- [4]**