

- M1.** (a) 53 (m) 1
- (b) (i) Similar shape curve drawn above existing line going through (0, 0)  
*allow 1 mark for any upward smooth curve or straight upward line above existing line going through (0, 0)* 2
- (ii) rain on road 1
- car brakes in bad condition 1
- (c) (i) all three lines correctly labelled  
*allow 1 mark for one correctly labelled*
- top line – C  
*accept 1.2*
- middle line – B  
*accept 0.9*
- bottom line – A  
*accept 0.7* 2
- (ii) any **two** from:
- (table has) both variables are together  
*accept tired and music as named variables*
  - both (variables) could/ would affect the reaction time
  - cannot tell original contribution  
*accept cannot tell which variable is affecting the drive (the most)*
  - need to measure one (variable) on its own  
*accept need to test each separately*
  - need to control one of the variables 2

- M2.** (a) (i) same size 1
- (ii) **K** 1
- (b) velocity 1
- (c) **C** 1
- greatest mass **or** because it's heavier  
*accept biggest load*  
*accept heaviest **or** more weight*  
*do **not** accept fuller*  
*do **not** accept more items*  
*do **not** accept it's loaded*  
*do **not** accept loaded most*  
*ignore references to time as neutral* 1

[5]

- M3.**
- gravity
  - accelerates
  - friction
  - falls at a steady speed  
*each for 1 mark*

[4]

- M4.**
- (a) (i) friction  
*accept any way of indicating the correct answer* 1
- (ii) gravity  
*accept any way of indicating the correct answer* 1
- (b) (i) accelerates **or** speed / velocity increases  
*accept faster and faster (1 mark)*  
*do **not** accept faster pace / falls faster*  
*or suggestions of a greater but constant speed* 1
- downwards / falls  
*accept towards the Earth / ground*  
*this may score in part (b)(ii) if it does not score here and*  
*there is no contradiction between the two parts* 1
- (ii) constant speed / velocity **or** terminal velocity / speed or zero acceleration  
*stays in the same place negates credit* 1

[5]

**M5.** (a) B

more aerodynamic **or** most streamlined shape **or**  
smaller (surface) area

*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*

2

(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

*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*

1

[7]