

- 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

[9]

- 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]