

Name of the Student: _____

Max. Marks : 19 Marks

Time : 19 Minutes

Mark Schemes

Q1.

- (a) (i) 75 000
*accept correct substitution for 1 mark
ie 7500×10*
2
- newtons / N
*do **not** accept n
full credit for using $g = 9.8$ **or** 9.81*
1
- (ii) 60 000 000
*accept for both marks
their (a)(i) $\times 800$ correctly calculated
accept correct substitution for 1 mark
ie their (a)(i) $\times 800$*
2
- (b) (i) arrow drawn parallel (to) **and** down (the) slope
accept arrow drawn anywhere on the diagram
1
- (ii) increases
1
- GPE transformed to KE
or
speed increasing
*accept is accelerating
however 'speed increasing' only scores if correctly linked to increasing kinetic energy*
1
- (c) so more likely to wear one
or
they know wearing a helmet is likely to / will reduce (risk) head injury
or
so can make an (informed) choice (about wearing one)
1

[9]

Q2.

- (a) (i) 10800

allow 1 mark for correct substitution i.e. 900×12

2

- (ii) arrow pointing towards the left

allow anywhere on the diagram or at bottom of the page

1

- (b) zero

accept 0 / none / nothing

1

velocity is zero

accept speed for velocity

accept stopped / not moving

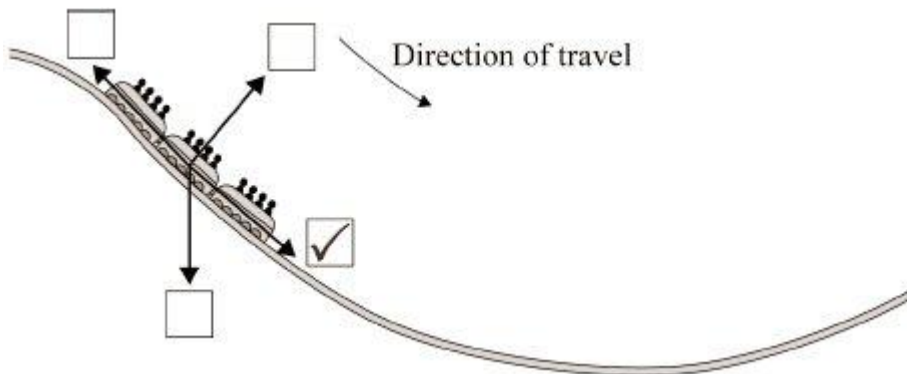
accept a calculation i.e. $900 \times 0 = 0$

1

[5]

Q3.

- (a) correct box ticked



1

- (b) each passenger has a different mass

accept weight for mass

ignore other irrelevant factors about the person e.g. mass and height

do not accept a list with incorrect factors e.g. mass and position

accept passengers started with different (gravitational) potential energy

1

- (c) (i) 29.4

ignore added units

1

- (ii) 2400

accept their (c)(i) $\times 80$ 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

2

[5]