Questions are for both separate science and combined science students

Q1.

Figure 1 shows a young child using a baby walker.

Figure 1

Use the Physics Equations Sheet to answer parts (b) and (c).

(a) Write down the equation which links distance (*s*), force (*F*) and work done (*W*).

_____

(1)

(b) The child pushed the baby walker 2.8 m across a horizontal floor.

The work done by the child was 35 J.

Calculate the horizontal force the child applied to the baby walker.

_____

_____

_____

_____

_____

Horizontal force = _____ N

(3)

(c) The child pushed the baby walker from a carpet onto a hard floor.
The child applied the same horizontal force to the baby walker.

Explain why the speed of the baby walker increased.

_____

_____

_____

(2)

(Total 6 marks)

Q2.

Use the Physics Equations Sheet to answer parts (e) and (f).

(a) Write down the equation which links distance (*s*), force (*F*) and work done (*W*).

_____

(1)

(b) When travelling at its maximum speed the air resistance acting on the car is 4000 N.

Calculate the work done against air resistance when the car travels a distance of 7.5 km at its maximum speed.

_____

_____

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_____

Work done = _____ J

(3)

(Total 4 marks)