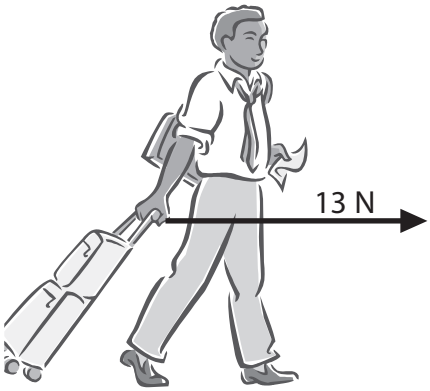
6 A person has a suitcase with wheels.



(a) The person pulls the suitcase with a horizontal force of 13 N for 110 m.

(i) State the equation linking work done, force and distance moved.

(1)

(ii) Calculate the work done on the suitcase by the person.

(2)

work done = ... J

(iii) How much energy is transferred to the suitcase?

(1)

energy transferred = ... J

(b) The suitcase falls over.

Explain why it loses gravitational potential energy when it falls.

(2)

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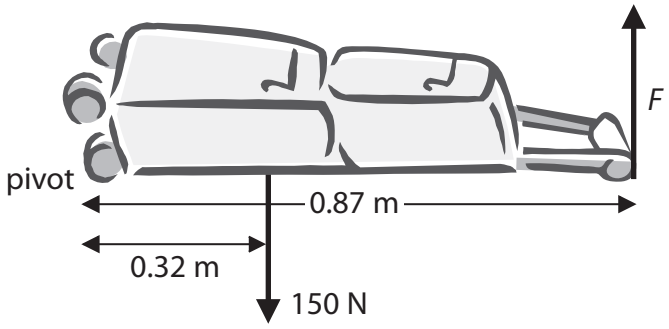
.....

.....

.....

(c) The person starts to raise the suitcase again by pulling on the handle with force *F*.

The weight of the suitcase is 150 N.



(i) State the equation linking moment, force and perpendicular distance from the pivot.

(1)

.....

(ii) Calculate the force *F* that the person must apply on the handle to start raising the suitcase.

(3)

force *F* = ... N

(Total for Question 6 = 10 marks)