

Answer on Question #68261 Physics / Mechanics | Relativity

A girl shoves a book at rest on a table and it moves with an acceleration of 1.3 m/s. After 5 s, the book falls at the edge of the table. If the table height is 1.2 m, find the horizontal distance that it hit the floor. (ans: 3.22 m)

Solution:

The initial horizontal speed of the book

$$v_0 = at = 1.3 \times 5 = 6.5 \frac{\text{m}}{\text{s}}$$

Therefore horizontal

$$l = \sqrt{\frac{2h}{g}} \times v_0 = \sqrt{\frac{2 \times 1.2}{9.8}} \times 6.5 = 3.22 \text{ m.}$$

Answer: 3.22 m.

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