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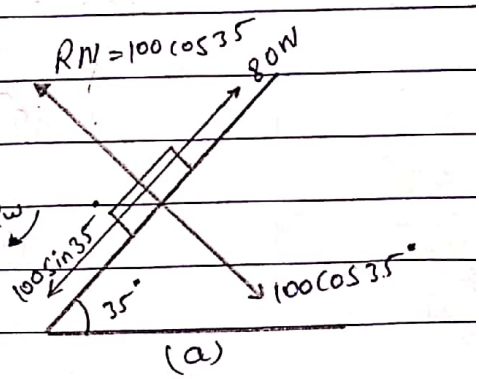
Section-1

Q2

Ans. Given :-

Weight = 100 N

Angle = 35°



(a)

Pulled force = 80 N

Distance trave = (S) = 4 m

- To calculate the velocity (v) = ?

fig (a) is mentioned above.

∵ force along plane $\Sigma H = 0$

∴ $F = 80 - 100 \sin 35° - HR_n$

∴ $\boxed{F = 22.64 N}$

As we know, $W = 100 N$

∴ $m = 10.2 kg$

∴ $F = ma$

$a = \frac{F}{m} = \frac{22.64}{10.2}$

$\boxed{a = 2.22 m/s^2}$

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From eqⁿ. of motion :-

$$v^2 = u^2 + 2as$$

$$v^2 = 0 + 2 \times 3.22 \times 4$$

$$v^2 = 17.76$$

$$v = 4.2 \text{ m/s}$$ Ans.