

3 Further Mechanics – Part 2 — Answers

Answers

3.1 $T = \frac{\lambda x}{L} = \frac{40 \times 0.5}{2} = 10 \text{ N}.$

3.2 $E = \frac{40 \times 0.5^2}{2 \times 2} = \frac{10}{4} = 2.5 \text{ J}.$

3.3 $e = \frac{2}{8} = 0.25.$

3.4 (a) $e = 1$; (b) $e = 0.$

3.5 (Total linear) momentum.

3.6 Extension $x = 2 - 1.5 = 0.5 \text{ m}.$ Tension $T = \frac{60 \times 0.5}{1.5} = 20 \text{ N};$ energy $E = \frac{60 \times 0.5^2}{2 \times 1.5} = \frac{15}{3} = 5 \text{ J}.$