

Dynamics answers

Questions A

1 15N

2 $a = \frac{2}{9}(4i + 10j)$

3 $a = 0.96\text{ms}^{-2}$ $s = 7.68\text{m}$

4 1500N

5 1625N

6 $a = 0.45\text{ms}^{-2}$

7 6.25N

Questions B

1 (a) $I = 4.25\text{Ns}$ (b) $F = 28.3\text{N}$

2 $a = g/3$ (b) $T = 65.3\text{N}$

3 (a) $a = 7.84\text{ms}^{-2}$ (b) 0.553 sec (c) 3.68ms^{-1}

4 (a) 14400N (b) $F = 32\text{KN}$

5 (a) $V_B = 6\text{v}$ (b) 18mVNs

6 mass = 0.00306Kg

7 $T = 60.6\text{N}$ $m = 5.04\text{Kg}$

8 (a) $a = 2.57\text{ms}^{-2}$ $T = 16.4\text{N}$ (b) $a = 1.91\text{ms}^{-2}$ $T = 13.5\text{N}$

9 (a) $T = 54.1\text{N}$ $a = 5.64\text{ms}^{-2}$ (b)

10 $(-42i - 72j)\text{Ns}$

11 $V = (3.2i - 5.2j)ms^{-1}$

12 (a) $V = 3.04ms^{-1}$

(b) Impulse = 1370Ns (c) 996N