

Question Number	Answer	Mark
11(a)	<p>Use of $W = mg$ (1)</p> <p>Use of $F = ma$ (1)</p> <p>$a = 4.8 \text{ m s}^{-2}$ (1)</p> <p><u>Example calculation</u></p> <p>$W = 5.0 \times 10^6 \text{ kg} \times 9.81 \text{ N kg}^{-1} = 4.91 \times 10^7 \text{ N}$</p> <p>$\Sigma F = 7.3 \times 10^7 \text{ N} - 4.91 \times 10^7 \text{ kg} = 5.0 \times 10^6 \text{ kg} \times a$</p> <p>$a = \frac{2.39 \times 10^7 \text{ N}}{5.0 \times 10^6 \text{ kg}} = 4.78 \text{ m s}^{-2}$</p>	3
11(b)	<p>The mass / weight of the rocket / fuel decreases (because fuel is used up)</p> <p>Or</p> <p>The thrust force increases</p> <p>Or</p> <p>The resultant force increases (1)</p>	1
Total for question 11		4