

Multiple Choice Answers

Q9: C

Q10: D

Multiple Choice Answers

Q9: D

Q10: B

Q12: D

Multiple Choice Answers

Q10: D

Q11: B

Multiple Choice Answers

Q9: B

Multiple Choice Answers

Q10: C

Multiple Choice Answers

Q9: C

4(a)	<u>sum / total</u> momentum (of a system of bodies) is constant or <u>sum / total</u> momentum before = <u>sum / total</u> momentum after
	for an isolated system / no (resultant) <u>external</u> force
4(b)(i)	$p = mv$ or 4.0×6.0 or 2.0×3.0 $(4.0 \times 6.0) + (2.0 \times 3.0) = 6.0 \times v$
	so $v = 5.0 \text{ m s}^{-1}$
4(b)(ii)	KE before $= (0.5 \times 4.0 \times 6.0^2) + (0.5 \times 2.0 \times 3.0^2)$ $= 81 \text{ J}$
	KE after $= (0.5 \times 6.0 \times 5.0^2)$ $= 75 \text{ J}$
	percentage transferred $= [(81 - 75) / 81] \times 100$ $= 7\%$

7(a)	nucleon number of Q = 226 <u>and</u> proton number of R = 86
7(b)	$4(u) \times 1.5 \times 10^7$ or $222(u) \times v$
	$v = 4(u) \times 1.5 \times 10^7 / 222(u)$
	$= 2.7 \times 10^5 \text{ m s}^{-1}$
7(c)	Any three from: • momentum • charge • nucleon number • neutron number • proton number