AQA GCSE Combined Science - Trilogy | 8464

SPECIFICATION POINT 6.5.4.1.3

Velocity

Mark schemes and examiner comments

Tier	**Foundation**
Question groups	**2**
Available paper years	**2020–2021**

Using this booklet

1. Booklet answer numbers match the question booklet.
2. Use the original question number within marking tables.
3. Examiner comments are included where available.

Name: _____ **Date:** _____

Where a precise marking extract is unavailable, the full source document is included in an appendix. Any missing mark scheme is explicitly identified.

6.5.4.1.3 Velocity

Answer 01 · Mark scheme

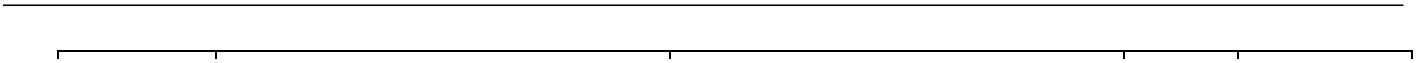
November 2020 | 8464/P/2F | Original Q1

Question	Answers	Extra information	Mark	AO / Spec. Ref.
01.1	vectors have magnitude and direction		1	AO1 6.5.4.1.3
01.2	there is a resultant force acting on the ball		1	AO1 6.5.4.2.1
01.3	length of lane = 4.5 × 4.0 length of lane = 18 (m)		1 1	AO2 6.5.4.1.3
01.4	arrow in opposite direction arrow same length drawn from the ball		1 1	AO1 6.5.4.2.3
01.5	$a = \frac{12 - 0}{0.15}$ $a = 80\ (m/s^2)$		1 1	AO2 6.5.4.1.3
01.6	increases stays the same increases		1 1 1	AO2 6.1.1.2 6.5.4.1.3
Total			11	

6.5.4.1.3 Velocity

Answer 01 · Mark scheme

November 2020 | 8464/P/2F | Original Q1



6.5.4.1.3 Velocity

Answer 02 · Mark scheme

November 2021 | 8464/P/2F | Original Q7

Question	Answers	Extra information	Mark	AO / Spec. Ref.
07.1	a quantity with both magnitude and direction		1	AO1 6.5.1.1
07.2	displacement		1	AO1 6.5.4.1.1
07.3	gradient = $\frac{(4-0)}{(1.6-0)}$ acceleration = 2.5 m/s^2	 allow use of a = Δv / t	1 1	AO2 6.5.4.1.5
07.4	constant deceleration	allow large deceleration allow decelerates to a stop	1	AO2 6.5.4.1.5
07.5	resultant force = mass × acceleration **or** F = ma	allow force = mass × acceleration	1	AO1 6.5.4.2.2
07.6	1800 = m × 25 m = $\frac{1800}{25}$ m = 72 (kg)		1 1 1	AO2 6.5.4.2.2
07.7	performance can be monitored during the game	allow do not have to wait until the end of the game to download data	1	AO3 6.6.2.4
Total			**10**	

6.5.4.1.3 Velocity

Answer 02 · Examiner comments

November 2021 | 8464/P/2F | Original Q7

Question 7 (standard demand)

07.1 75% of students knew that a vector was a quantity with both magnitude and direction.

07.2 30% of students knew that displacement was the vector.

07.3 Approximately 10% of students were able to determine the acceleration from the graph.

07.4 Nearly 20% of students were able to describe the motion of the player. Of those that were unable to and scored no marks, most gave answers such as ‘the motion decreased’.

07.5 Just under 50% of students correctly recalled the equation.

07.6 This standard demand calculation was reasonably well answered. Nearly 75% were able to substitute into the correctly rearranged equation, and the vast majority of those went on to correctly evaluate the answer and score full marks.

07.7 Nearly 20% of students wrote a reasonable suggestion that the data could be analysed during the game. Many of the incorrect answers suggested that the data could be analysed after the game.

6.5.4.1.3 Velocity

Mark Ranges and Award of Grades

Grade boundaries and cumulative percentage grades are available on the Results Statistics page of the AQA Website.