Q1.

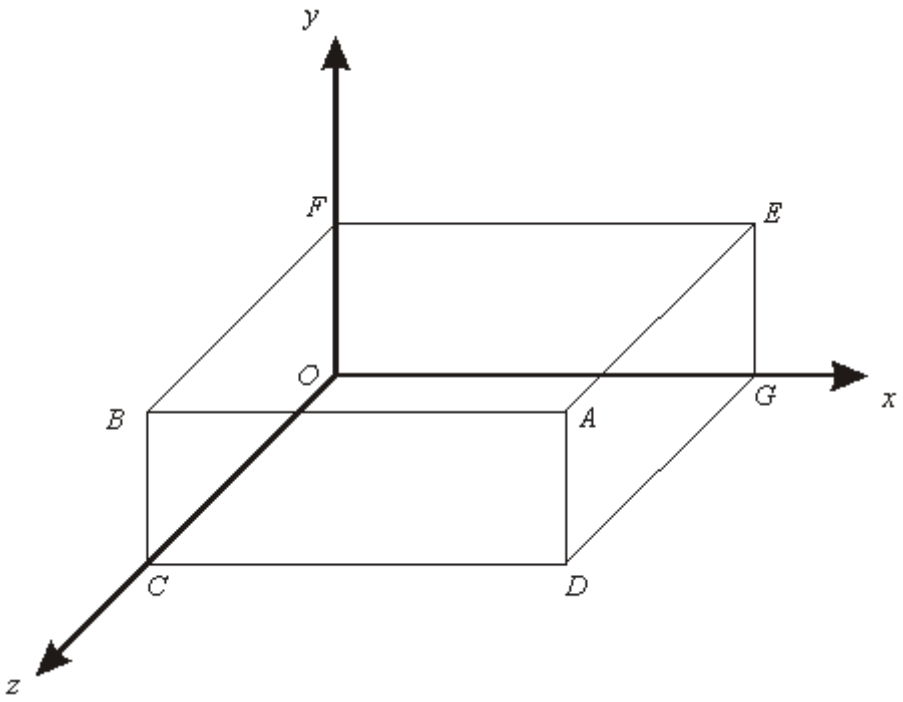

Diagram **NOT** accurately drawn

The diagram shows a cuboid drawn on a 3-D grid.

Vertex A has coordinates (5, 2, 3).

(a) Write down the coordinates of vertex E.

(..... , ... , ...)

(1)

B and D are vertices of the cuboid.

(b) Work out the coordinates of the midpoint of BD.

(..... , ... , ...)

(3)
(Total 4 marks)

Q2.

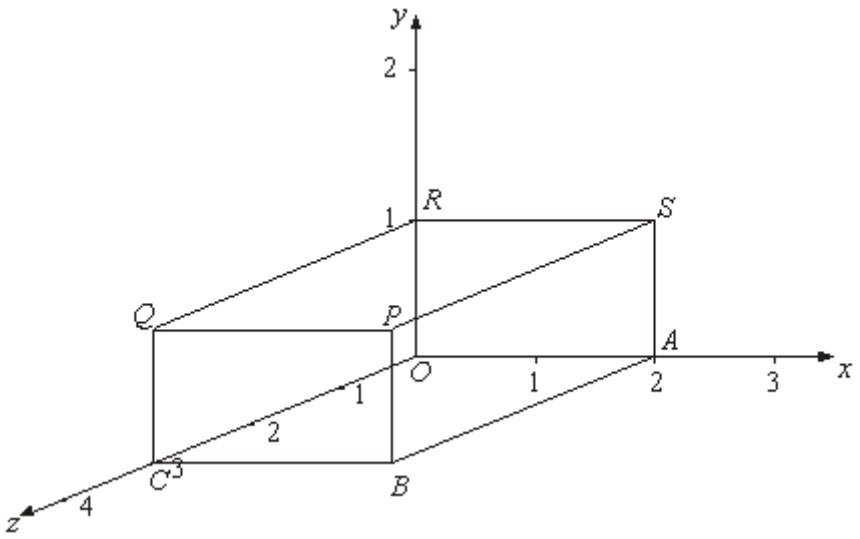

Diagram **NOT** accurately drawn

A cuboid is shown on a 3-dimensional grid.

(a) Write down the letter of the point with coordinates (2, 1, 0).

.....

(1)

(b) Write down the coordinates of the point *P*.

(..... , ... , ...)

(1)
(Total 2 marks)

M1.

	Working	Answer	Mark	Additional Guidance
(a)		(5, 2, 0)	1	**B1** for (5, 2, 0) cao
(b)	$\left(\frac{0+5}{2}, \frac{2+0}{2}, \frac{3+3}{2}\right)$	$\left(\frac{5}{2}, 1, 3\right)$	3	**B1** for (0, 2, 3) or for (5, 0, 3) or for (0, 0, 3) seen or implied **M1** for $\left(\frac{x_1 + x_2}{2}, \frac{y_1 + y_2}{2}, \frac{z_1 + z_2}{2}\right)$ **A1** for $\left(\frac{5}{2}, 1, 3\right)$ oe **B1** SC for $(x, y, 3)$ ***Alternative mark scheme*** **B1** for each coordinate correct.
				Total for Question: 4 marks

M2.

	Answer	Mark	Additional Guidance
(a)	S	1	**B1** for S cao
(b)	(2, 1, 3)	1	**B1** for (2, 1, 3) cao
			Total for Question: 2 marks

E1. Candidates realised what was required in this question but could not often carry out the execution of the task. In part (a) it was common to see a repetition of the coordinates of A whilst in (b) some candidates gained credit for realising that the z coordinate was in the same plane as *ABCD* and so gained a mark for using 3.

E2. About three quarters of the candidates were able to gain at least one mark on this question. In part (a), a common incorrect answer for the point with coordinates (2, 1, 0) was *R*, and in part (b), a common incorrect answer for the coordinates of *P* was (2, 3, 1).