

Name:

Exam Style Questions

3D Coordinates



Equipment needed: Calculator, pen

Guidance

1. Read each question carefully before you begin answering it.
2. Check your answers seem right.
3. Always show your workings

Video Tutorial

www.corbettmaths.com/contents

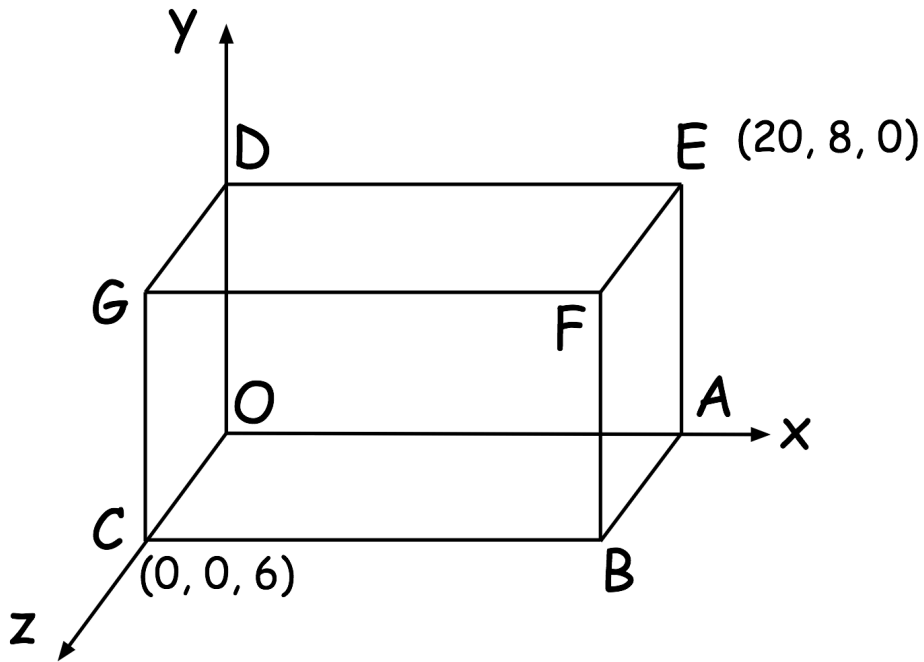
Video 86



Answers and Video Solutions



1. Shown below is a cuboid.



Vertex C has coordinates $(0, 0, 6)$

Vertex E has coordinates $(20, 8, 0)$

(a) Write down the coordinates of vertex A

(.....,,)
(1)

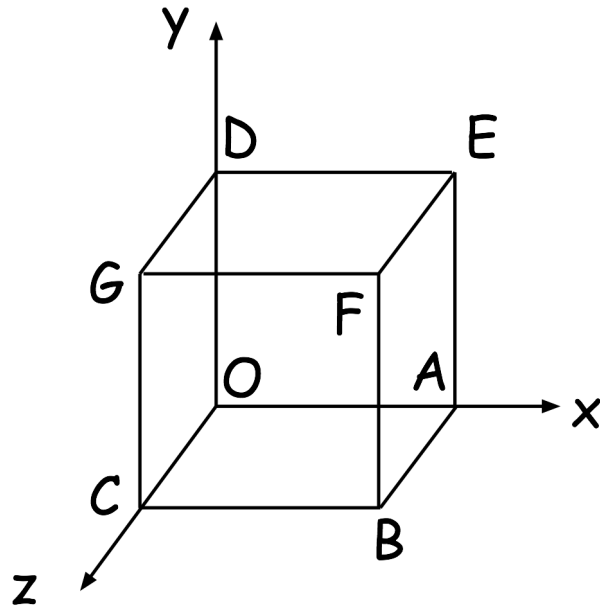
(b) Write down the coordinates of vertex B

(.....,,)
(1)

(c) Write down the coordinates of vertex F

(.....,,)
(1)

2. Below is a cube on a 3D grid.



The coordinates of vertex B is $(8, 0, 8)$

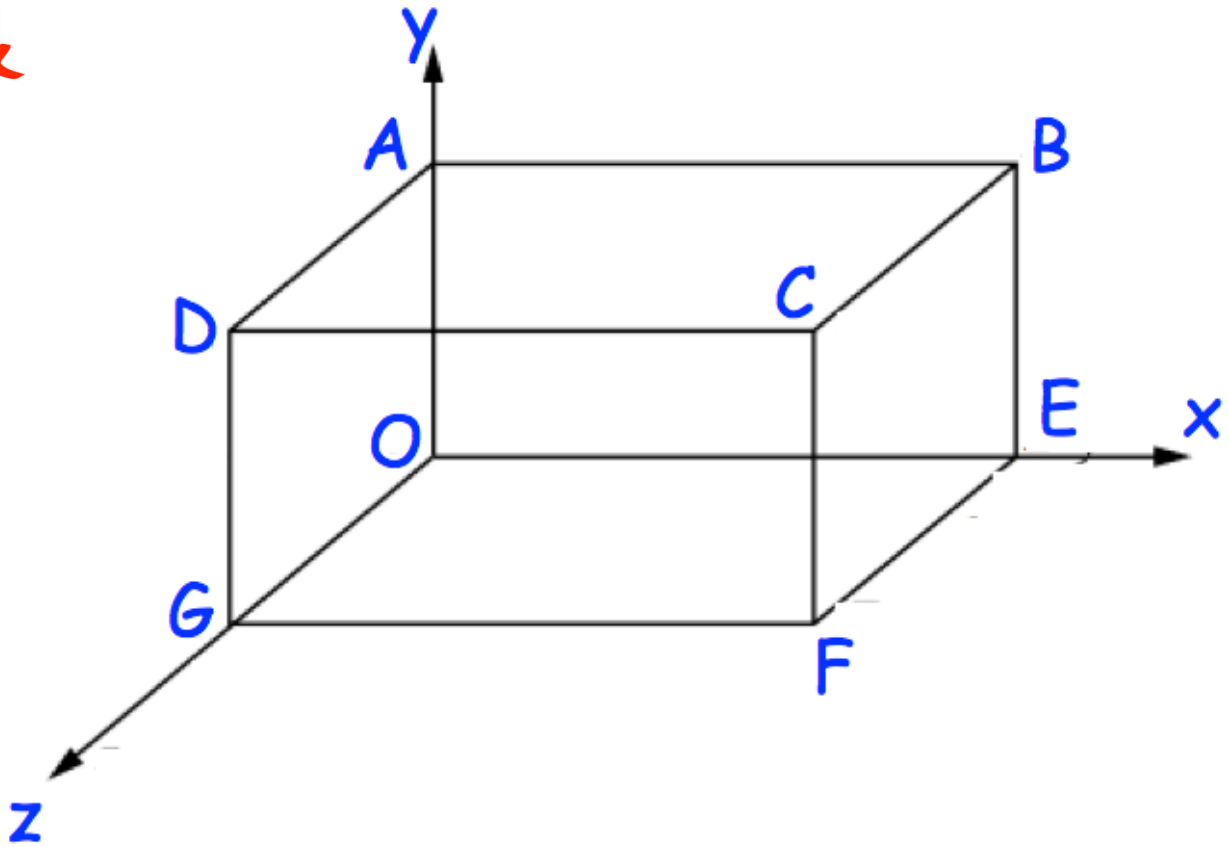
(a) Write down the coordinates of vertex F

(.....,,)
(1)

(b) Write down the coordinates of vertex G

(.....,,)
(1)

3.



This diagram shows a cuboid drawn on a 3D grid.
C has coordinates (5, 2, 3).

(a) Write down the coordinates of the point A.

(..... , ,)
(1)

(b) Write down the coordinates of the point F.

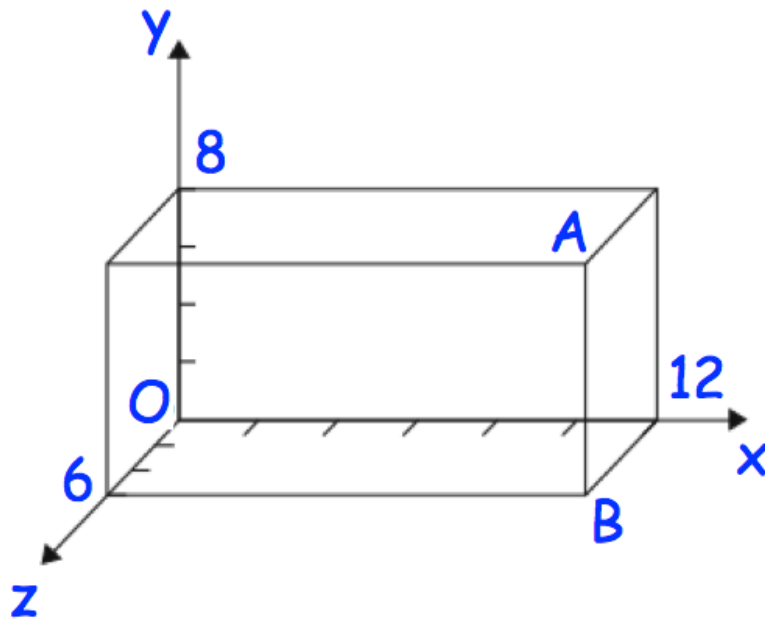
(..... , ,)
(1)

The coordinate H is the midpoint of FG.

(c) Write down the coordinates of the point H.

(..... , ,)
(1)

4. Here is a cuboid drawn on a 3D grid.



(a) Write down the coordinates of the point A.

(..... , ,)
(1)

(b) Write down the coordinates of the point B.

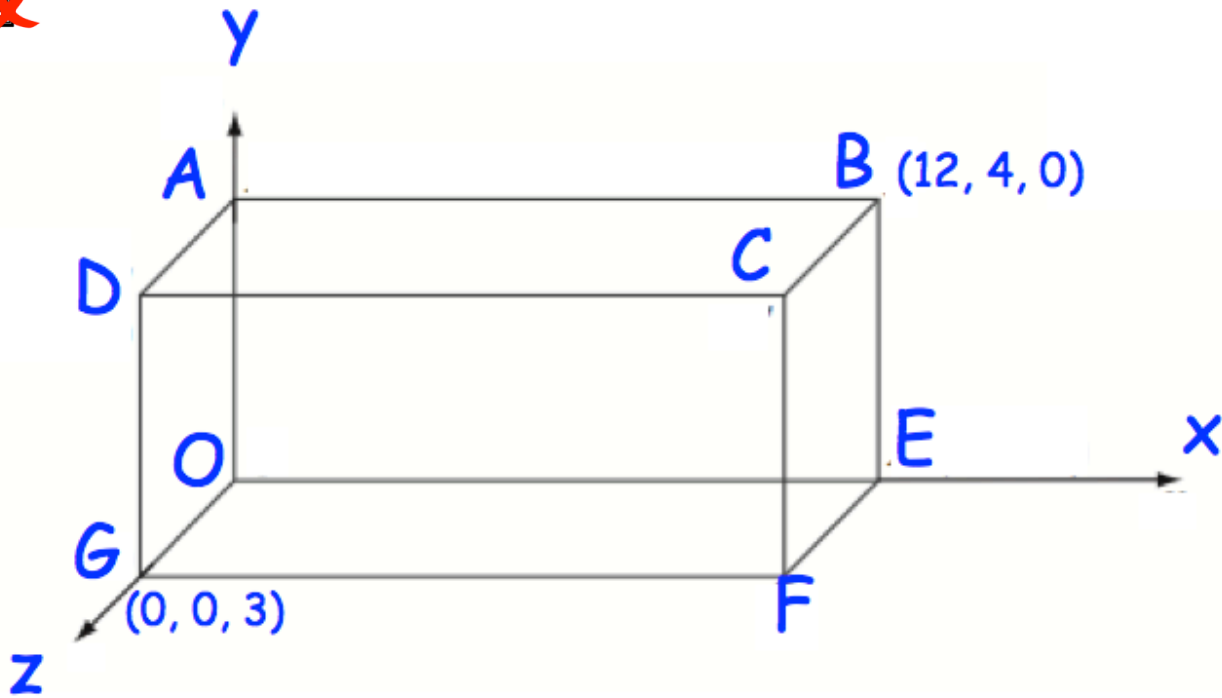
(..... , ,)
(1)

The coordinate C is the midpoint of AB.

(c) Write down the coordinates of the point C.

(..... , ,)
(1)

5. The diagram shows a cuboid on a 3D grid.



(a) Write down the coordinates of the point C.

(..... , ,)
(1)

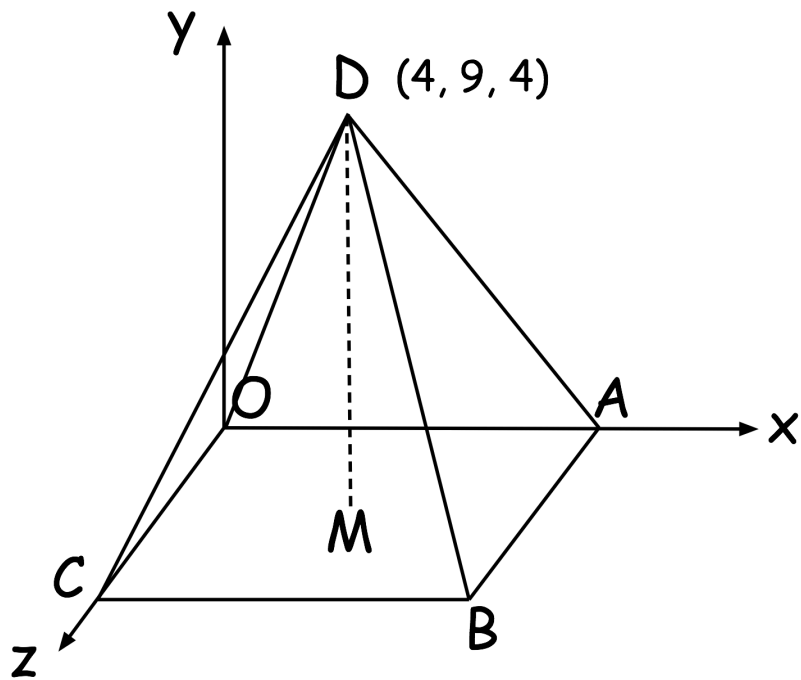
(b) Write down the coordinates of the point F.

(..... , ,)
(1)

(c) Write down the coordinates of the midpoint of the line segment BG.

(..... , ,)
(1)

6. The diagram shows a square based pyramid drawn on a 3D grid.

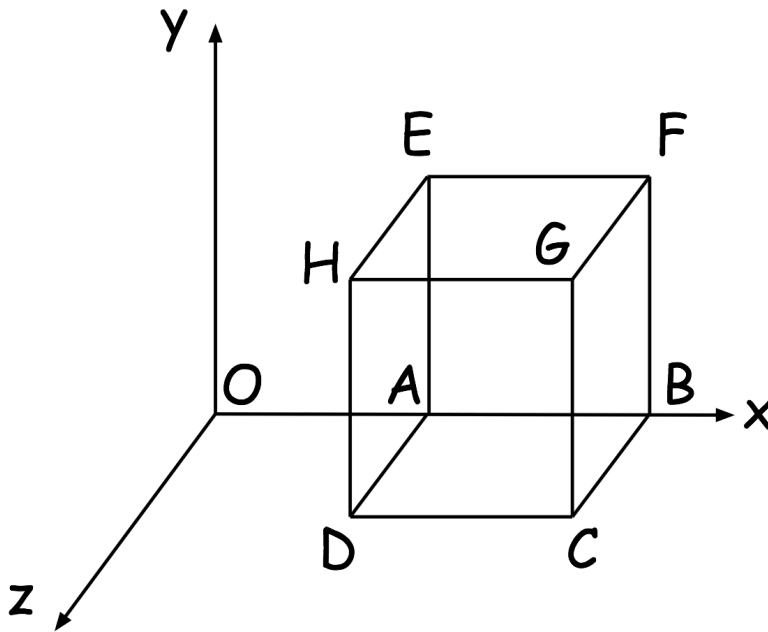


M is the centre of the base OABC.
D is directly above M.

Find the coordinates of the point B.

(..... , ,)
(2)

7. Shown below is a cube on a 3D grid.



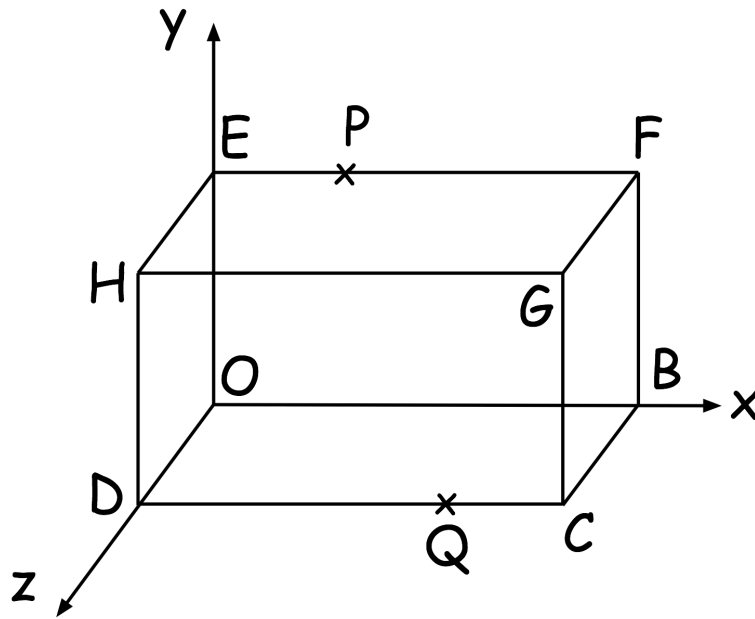
The coordinates of vertex A are $(7, 0, 0)$

The coordinates of vertex B are $(12, 0, 0)$

Write down the coordinates of vertex G

(..... , ,)
(2)

8. The diagram shows a cuboid on a 3D grid.



The coordinates of vertex E are $(0, 18, 0)$

The coordinates of vertex D are $(0, 0, 10)$

The point P lies on EF such that $EP : PF = 2 : 3$

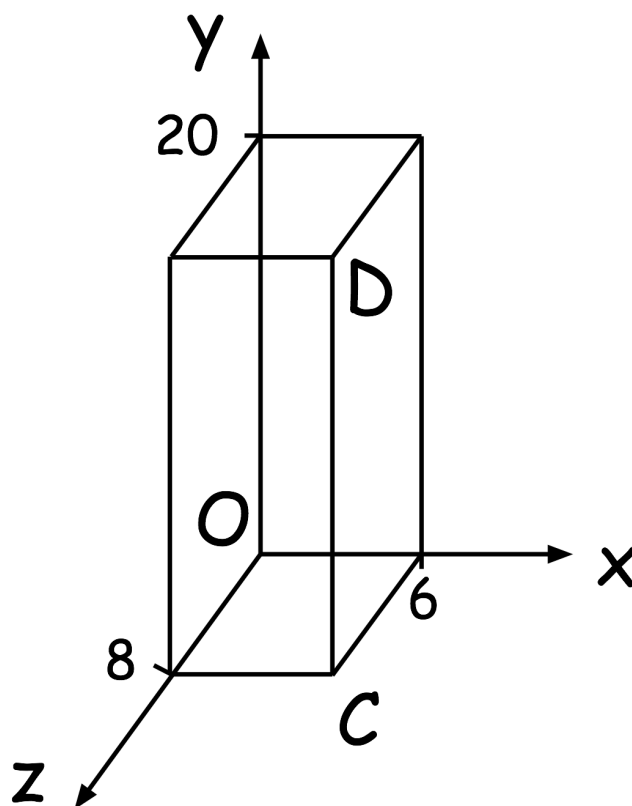
The point Q lies on DC such that $DQ : DC = 4 : 5$

The coordinates of point P are $(12, 18, 0)$

Work out the coordinates of the midpoint of PQ.

(..... , ,)
(4)

9. $(0, 0, 0)$, $(6, 0, 0)$, $(0, 20, 0)$ and $(0, 0, 8)$ are vertices of a cuboid.
C and D are also vertices of the cuboid.



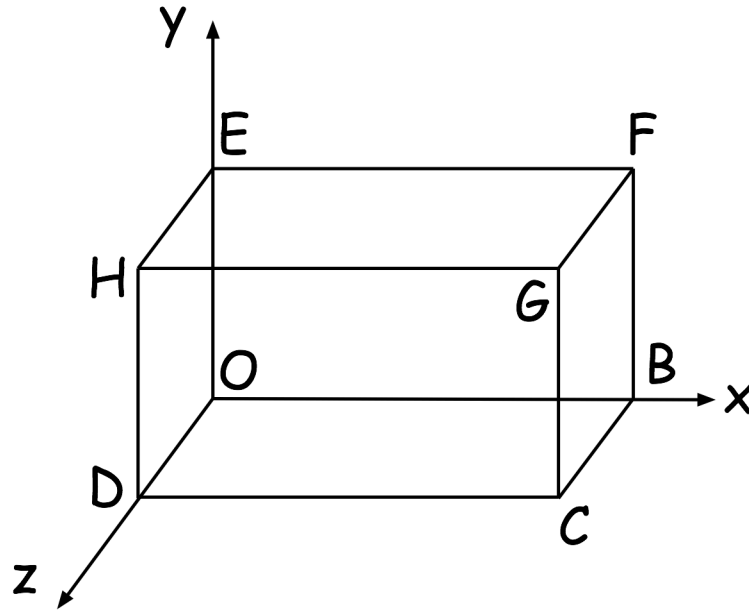
- (a) Work out the distance between O and C.

.....
(2)

- (b) Work out the distance between O and D.

.....
(3)

10. Shown below is a cuboid.



Vertex G has coordinates (9, 6, 4)

(a) Calculate the length of OC

.....
(2)

(b) Calculate the size of angle COG

.....°
(3)