

Mock Grade 6

Maths

Booklet 1

Paper 1H

Non-Calculator

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1 (a) Write down the value of $81^{\frac{1}{4}}$

.....
(1)

(b) Write down the value of 25^1

.....
(1)

(c) Work out the value of $64^{-\frac{2}{3}}$

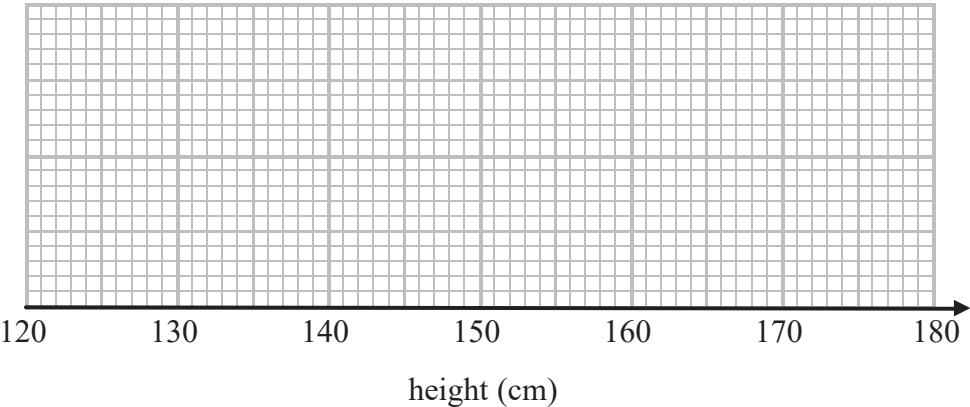
.....
(2)

(Total for Question 1 is 4 marks)

2 The table gives some information about the heights of 60 girls.

Least height	128 cm
Greatest height	169 cm
Lower quartile	135 cm
Upper quartile	150 cm
Median	146 cm

(a) Draw a box plot to represent this information.



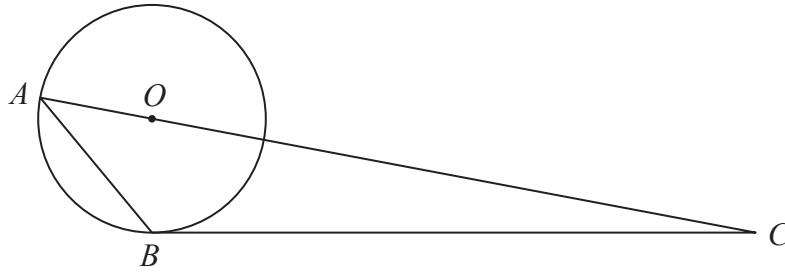
(3)

(b) Work out an estimate for the number of these girls with a height between 128 cm and 150 cm.

(2)

(Total for Question 2 is 5 marks)

3



A and B are points on a circle, centre O .

BC is a tangent to the circle.

AOC is a straight line.

Angle $ACB = x^\circ$.

Find the size of angle OAB , in terms of x .

Give your answer in its simplest form. Give reasons for each stage of your working.

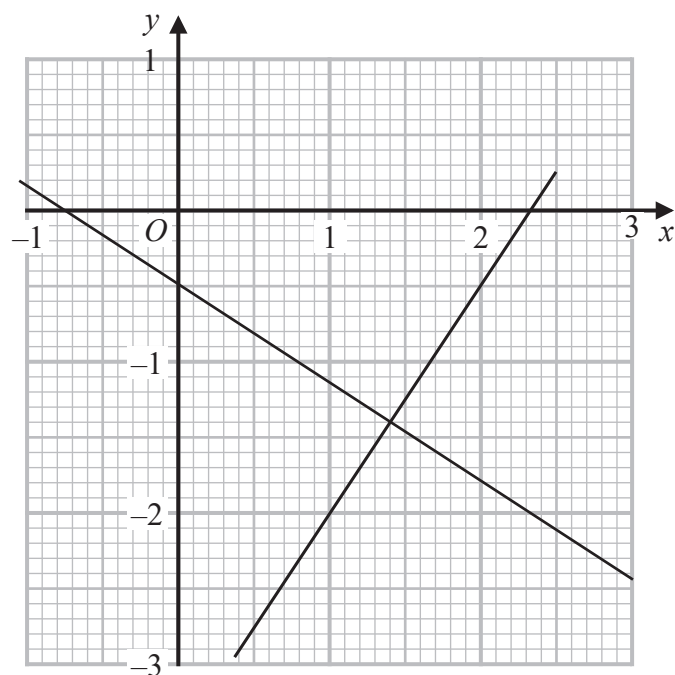
(Total for Question 3 is 5 marks)

4 Work out $4\frac{1}{2} \times 3\frac{4}{9}$

Give your answer as a mixed number in its simplest form.

.....
(Total for Question 4 is 3 marks)

- 5 The graphs with equations $3y + 2x = \frac{1}{2}$ and $2y - 3x = -\frac{113}{12}$ have been drawn on the grid below.



Using the graphs, find estimates of the solutions of the simultaneous equations

$$20y + 13x + 10 = 0$$

$$2y - 3x = -7$$

$x =$

$y =$

(Total for Question 5 is 2 marks)

6 A bus company recorded the ages, in years, of the people on coach A and the people on coach B.

Here are the ages of the 23 people on coach A.

18

19

24

28

31

32

32

32

35

40

41

45

48

49

49

50

52

55

56

58

62

64

69

(a) Complete the table below to show information about the ages of the people on coach A.

Median	
Lower quartile	
Upper quartile	
Least age	41
Greatest age	79

(2)

Here is some information about the ages of the people on coach B.

Median	39
Lower quartile	36
Upper quartile	48
Least age	25
Greatest age	88

Richard says that the people on coach A are younger than the people on coach B.

(b) Is Richard correct?
 You must give a reason for your answer.

.....

.....

.....

(1)

Richard says that the people on coach A vary more in age than the people on coach B.

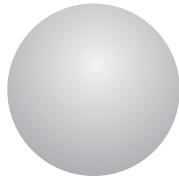
(c) Is Richard correct?

You must give a reason for your answer.

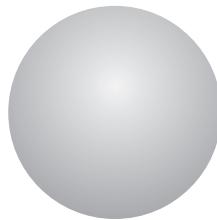
(1)

(Total for Question 6 is 4 marks)

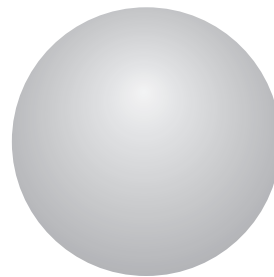
7 Here are three spheres.



P



Q



R

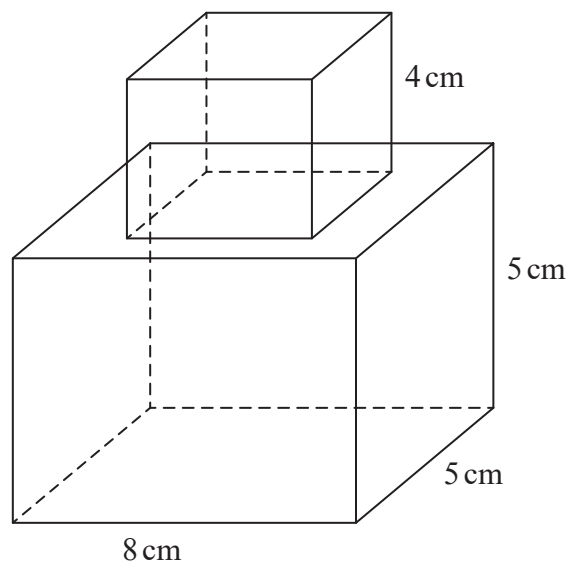
The volume of sphere **Q** is 25% more than the volume of sphere **P**.

The volume of sphere **R** is 25% more than the volume of sphere **Q**.

Find the volume of sphere **P** as a fraction of the volume of sphere **R**.

(Total for Question 7 is 3 marks)

- 8 A cube is placed on top of a cuboid, as shown in the diagram, to form a solid.



The cube has edges of length 4 cm.

The cuboid has dimensions 8 cm by 5 cm by 5 cm.

Work out the total surface area of the solid.

..... cm²

(Total for Question 8 is 3 marks)