Mock Grade 5

Maths Booklet 4

Paper 1H
Non-Calculator

www.ggmaths.co.uk

1 The table shows information about the heights, in cm, of a group of Year 9 girls.

least height	138 cm
median	151 cm
greatest height	173 cm

This stem and leaf diagram shows information about the heights, in cm, of a group of 15 Year 9 boys.
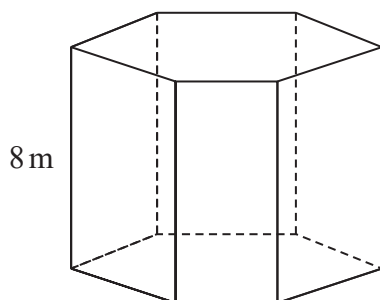
```
14 │ 1 1 2
15 │ 3 5 6 6 9
16 │ 2 3 4 7 7
17 │ 2 6
```

Key: 15 │ 5 represents 155 cm

Compare the distribution of the heights of the girls with the distribution of the heights of the boys.

....

....

....

....

....

....

(Total for Question 1 is 3 marks)

2 The diagram shows a prism placed on a horizontal floor.

8 m

$$\text{pressure} = \frac{\text{force}}{\text{area}}$$

The prism has height 8 m
The volume of the prism is 56 m³

The pressure on the floor due to the prism is 126 newtons/m²

Work out the force exerted by the prism on the floor.

.... newtons

(Total for Question 2 is 3 marks)

3 Write these numbers in order of size.
Start with the smallest number.

3.5×10^2 0.035×10^5 350×10^{-2} 35×10^0

....

(Total for Question 3 is 2 marks)

4 Rosie, Matilda and Ibrahim collect stickers.

$$\text{number of stickers Rosie has} : \text{number of stickers Matilda has} : \text{number of stickers Ibrahim has} = 5 : 11 : 18$$

Ibrahim has 52 more stickers than Rosie.

Ibrahim has more stickers than Matilda.

How many more?

....

(Total for Question 4 is 3 marks)

5 The diagram shows a prism.

36 cm

8 cm
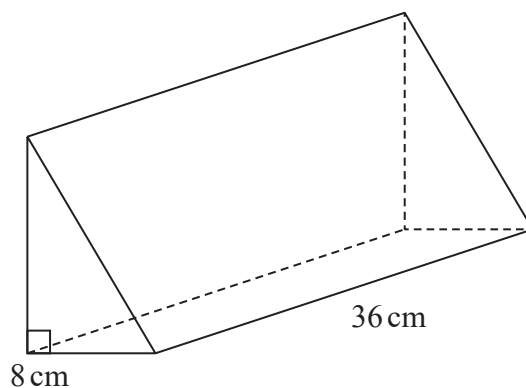
The cross section of the prism is a right-angled triangle.

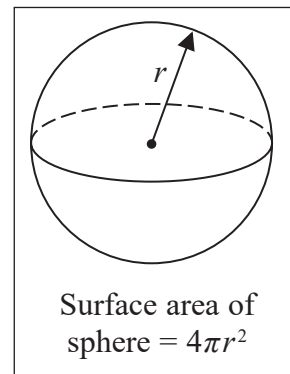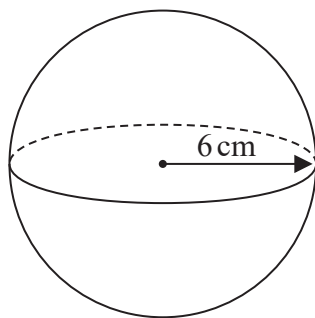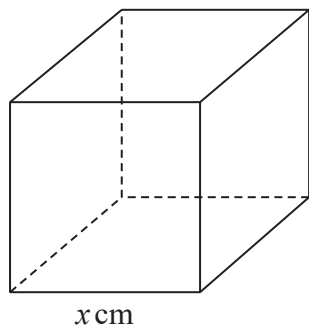The base of the triangle has length 8 cm

The prism has length 36 cm
The prism has volume 720 cm³

Work out the height of the prism.

.... cm

(Total for Question 5 is 3 marks)

6 The diagram shows a cube with edges of length x cm and a sphere of radius 6 cm.

Surface area of
sphere $= 4\pi r^2$

The surface area of the cube is equal to the surface area of the sphere.

Show that $x = \sqrt{k\pi}$ where k is an integer.

(Total for Question 6 is 4 marks)

7 Solve $x^2 = 8x + 14$

....

(Total for Question 7 is 3 marks)

8 (a) Write down the value of $49^{\frac{1}{2}}$

....

(1)

$p^9 \times p^5 = p^x$

(b) Write down the value of x

....

(1)

(c) Find the value of $64^{-\frac{1}{3}}$

....

(1)

(d) Find the value of $\left(\dfrac{64}{125}\right)^{-\frac{2}{3}}$

....

(2)

(Total for Question 8 is 5 marks)