

**The Haberdashers' Aske's Boys' School  
Elstree, Herts**

**13+ Entrance Test 2008**

**4th January 2008**



**MATHS (Paper 2)**

**Time : 30 Minutes**

Calculators ARE allowed

Candidate Name .....

Candidate Number .....

1. Calculate  $\frac{0.59 + (0.9)^2}{\sqrt{2.56}}$

.....

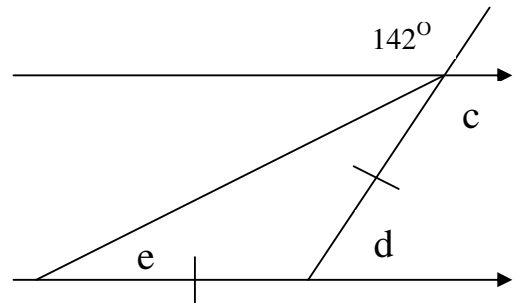
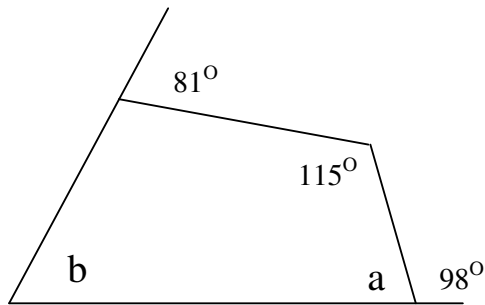
2. Convert to m: (a) 735 mm (b) 0.082 km

.....

Convert to m<sup>2</sup>: (c) 1400 cm<sup>2</sup> (d) 0.002 km<sup>2</sup>

.....

3. Calculate angles a, b, c, d and e in the diagrams below:



a = .....  
e = .....

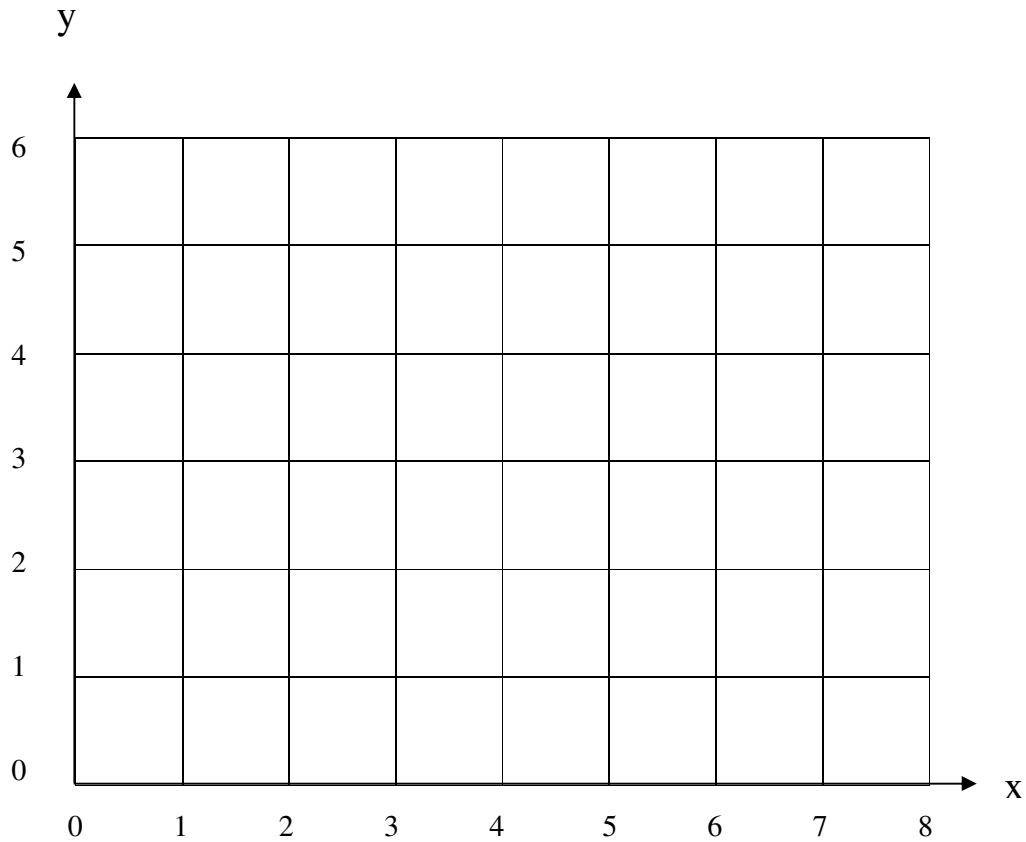
b = .....

c = .....

d = .....

4. Using the grid below, draw the quadrilateral with vertices at A(1,1) B(2,5) C(6,3) and D(4,0).

Making your method clear, calculate the area of ABCD.



Area = .....

5. (a) Find the mean and median of the numbers 4, 13, 5, 9, 7.

Mean = ..... Median = .....

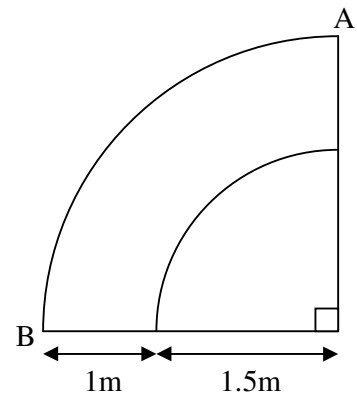
(b) Write down a set of five whole numbers, so that:

Mean = 5.8, Median = 5, Mode = 4 and Range = 6

The five numbers are: .....

6. A garden design includes a flower bed shaped as a quarter circle of radius 1.5 m, bordered by a gravel path of width 1 m.

Give answers in this question correct to 3 significant figures.



- (a) Find the length of the curved outer edge of the path, AB.

.....

- (b) Find the area of quarter circle ABC.

.....

- (c) Find the area of the gravel path.

.....

7.  $y$  and  $x$  are connected by the formula  $y = \frac{2x^2}{5} + x + 3$

- (a) In the table below, write in the values of  $y$  when  $x = 1$  and when  $x = 4$ .

- (b) Use trial and improvement to find the value of  $x$  when  $y = 4.39424$   
Show each trial in the table, continuing onto the second row.

|     |   |   |  |  |  |
|-----|---|---|--|--|--|
| $x$ | 1 | 4 |  |  |  |
| $y$ |   |   |  |  |  |

|     |  |  |  |  |  |
|-----|--|--|--|--|--|
| $x$ |  |  |  |  |  |
| $y$ |  |  |  |  |  |

END