National 5 Revision B Paper 1
Based on Int 2 2012

1. The National Debt of the United Kingdom was recently calculated as

£1 157 818 887 139.

Round this amount to four significant figures. 1

2. A teacher recorded the marks, out of ten, of a group of pupils for a spelling test.

Mark	Frequency
5	2
6	5
7	6
8	11
9	9
10	2

(*a*) Copy the frequency table and add a cumulative frequency column. 1

(*b*) For this data, find: 1

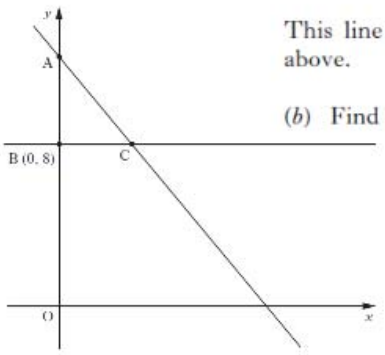
(i) the median; 1

(ii) the lower quartile; 1

(iii) the upper quartile. 2

(*c*) Draw a boxplot to illustrate this data.

3. The straight line with equation $4x + 3y = 36$ cuts the y-axis at A.

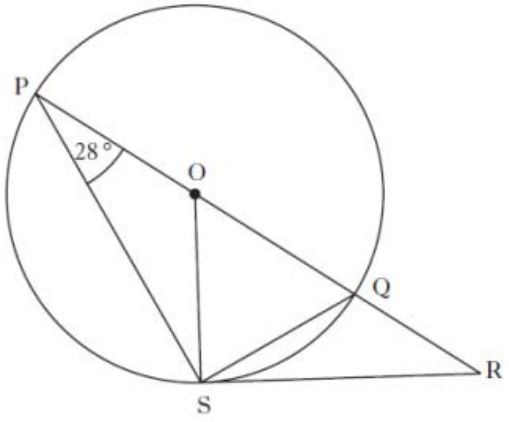


(*a*) Find the coordinates of A. 1

This line meets the line through B (0, 8), parallel to the x-axis, at C as shown above.

(*b*) Find the coordinates of C. 2

4.



In the above diagram,

- O is the centre of the circle
- PQ is a diameter of the circle
- PQR is a straight line
- RS is a tangent to the circle at S
- angle OPS is 28°.

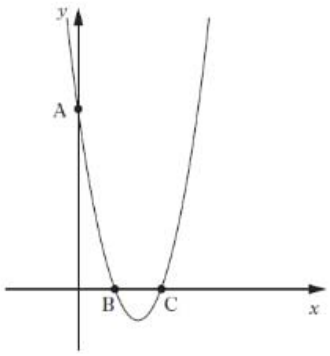
Calculate the size of angle QRS. 3

5. The equation $2x^2 + px - 6 = 0$ has equal roots. 4
Find the value(s) of p as a surd in its simplest form.

6. The equation $x^2 - 6x + 8 = 0$ can also be written as $(x - 2)(x - 4) = 0$.

(*a*) Write down the roots of the equation $x^2 - 6x + 8 = 0$. 1

Part of the graph of $y = x^2 - 6x + 8$ is shown below.

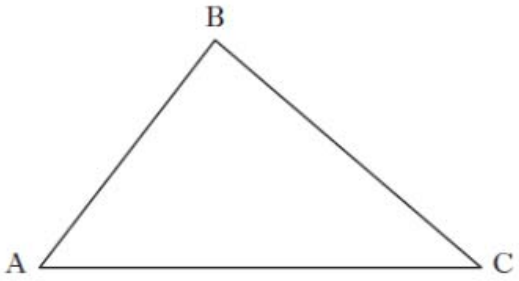


(*b*) State the coordinates of the points A, B and C. 3

(*c*) What is the equation of the axis of symmetry of this graph? 1

(d) Find the coordinates of the turning point. 1

7.



The area of triangle ABC is 20 square centimetres.

AC = 16 centimetres and $\sin C = \frac{1}{4}$.

Calculate the length of BC. 2

8. (*a*) Factorise

$$a^2 + 2ab + b^2.$$ 1

(*b*) Hence, or otherwise, find the value of

$$94^2 + 2 \times 94 \times 6 + 6^2.$$ 2

9. Sketch the graph of $y = -2 \sin x°$, $0 \leq x \leq 360$. 3

10. Simplify $\sqrt{2}\left(\sqrt{3} + \sqrt{2}\right) - \sqrt{6}$. 2

11. Write $x^2 - 6x + 8$ in the form $(x + a)^2 + b$ 2