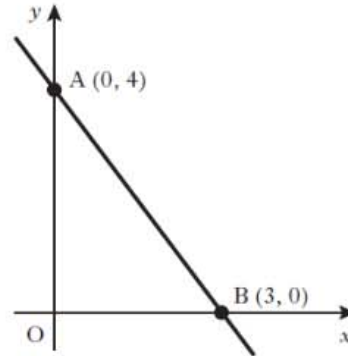


National 5 Exam Revision A Paper 1 (Non- Calculator)  
Based on Int 2 2013

1. Factorise  $6ab - 7bc$ .

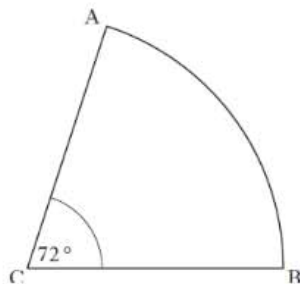
1

2. Find the equation of the straight line AB.



3

3. The diagram below shows a sector of a circle, centre C.



The radius of the circle is 5 centimetres and angle ACB is  $72^\circ$ .

3

Calculate the length of arc AB.

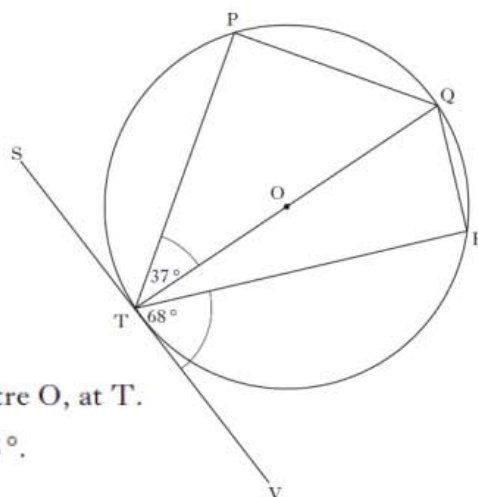
Take  $\pi = 3.14$ .

4. Solve algebraically the system of equations

3

$$\begin{aligned} 2x - y &= 10 \\ 4x + 5y &= 6. \end{aligned}$$

5.



3

The tangent SV touches the circle, centre O, at T.

Angle PTQ is  $37^\circ$  and angle VTR is  $68^\circ$ .

Calculate the size of angle PQR.

6. The stem and leaf diagram shows the number of minutes on average spent on homework per night by a group of first year pupils.

1	0 5 5 5
2	0 1 2 2 3 5 5 8 9
3	0 5 5 6 6 7 8 9 9 9
4	2 4 4 5 6 7
5	0

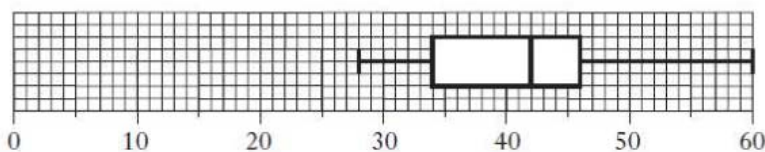
$n = 30$       1 | 0 represents 10 minutes

- (a) Using the above data find:

- (i) the median; 1
- (ii) the lower quartile; 1
- (iii) the upper quartile. 1

- (b) Draw a boxplot to illustrate this data. 2

- (c) A group of fourth year pupils was surveyed to find out how many minutes on average they spent on homework per night. The boxplot below was drawn for this data.

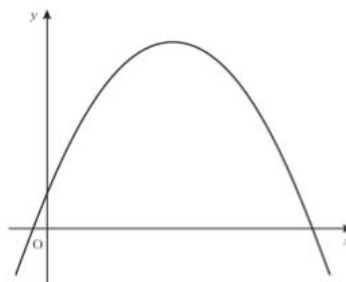


Compare the two boxplots and comment. 2

7. Simplify  $\frac{(x+4)^2}{x^2-x-20}$ . 3

8. State the period of  $y = \sin 2x^\circ$ . 1

9. The diagram below shows part of the graph of  $y = 20 - (x - 4)^2$ .



- (a) State the coordinates of the maximum turning point. 2

- (b) State the equation of the axis of symmetry. 1

10. Sketch the graph of  $y = \sin(x - 90)^\circ$ ,  $0 \leq x \leq 360$ . 3

11. The vectors  $\mathbf{u}$  and  $\mathbf{v}$  are as stated below.

$$\mathbf{u} = \begin{bmatrix} 4 \\ -1 \\ 5 \end{bmatrix} \quad \mathbf{v} = \begin{bmatrix} 3 \\ 3 \\ 1 \end{bmatrix}$$

Find the magnitude of  $|\mathbf{u} + \mathbf{v}|$  giving your answer as a surd in its simplest form. 4