**Over-lap Questions June 2019 Paper 3**

**24/1** E= {1, 2, 3, 4, 5, 6, 7, 8, 9}

*A* = {1, 5, 6, 8, 9}

*B* = {2, 6, 9}

|  |  |
| --- | --- |
| E |  |
|  |  |

(*a*)Complete the Venn diagram to represent this information.

**(3)**

A number is chosen at random from the universal set E.

(*b*)Find the probability that the number is in the set *A*  *B*

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**(2)**

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**25/2** Katy invests £200 000 in a savings account for 4 years.

The account pays compound interest at a rate of 1.5 % per annum.

Calculate the total amount of interest Katy will get at the end of 4 years.

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**(3)**

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**26/3** The table shows information about the heights of 80 plants.

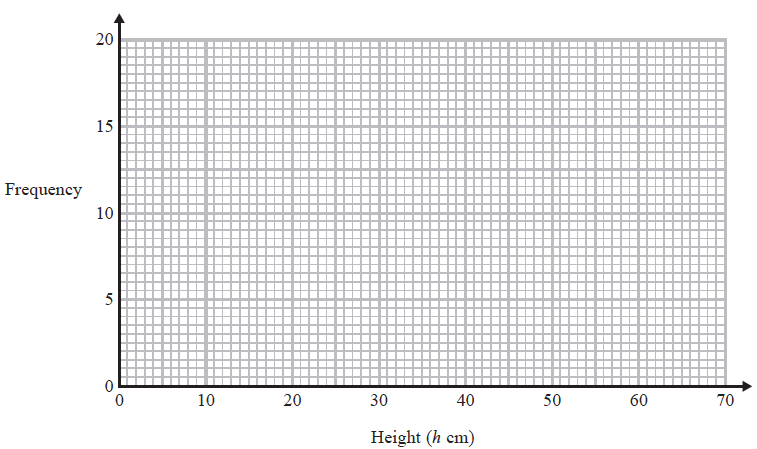
|  |  |
| --- | --- |
| **Height (*h* cm)** | **Frequency** |
| 10 < *h* ⩽ 20 | 7 |
| 20 < *h* ⩽ 30 | 13 |
| 30 < *h* ⩽ 40 | 14 |
| 40 < *h* ⩽ 50 | 12 |
| 50 < *h* ⩽ 60 | 16 |
| 60 < *h* ⩽ 70 | 18 |

(*a*)Find the class interval that contains the median.

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**(1)**

(*b*)On the grid, draw a frequency polygon for the information in the table.

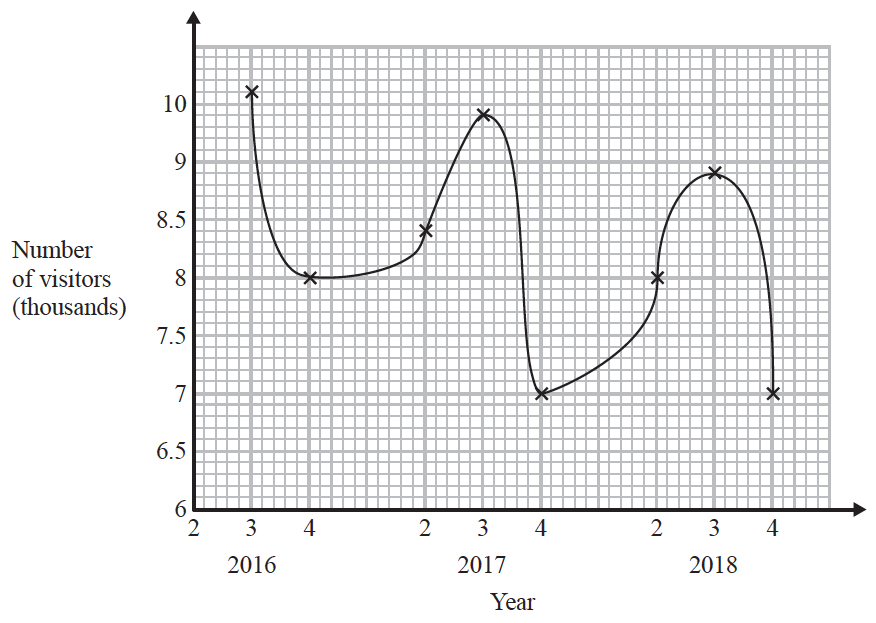


**(2)**

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**27/4** Sean has drawn a time series graph to show the numbers, in thousands, of visitors to a

fun park.



Write down two things that are wrong or could be misleading with this graph.

1 ...................................................................................................................................................

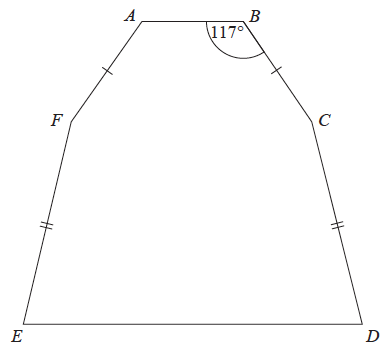
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2 ...................................................................................................................................................

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**(2)**

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**28/5** The diagram shows a hexagon.

The hexagon has one line of symmetry.

*FA* = *BC*

*EF* = *CD*

Angle *ABC* = 117°

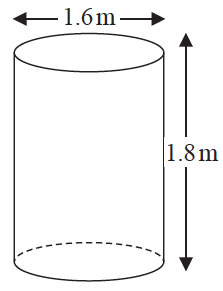
Angle *BCD* = 2 × angle *CDE*

Work out the size of angle *AFE*.

You must show all your working.

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**(4)**



**29/6** Jeremy has to cover 3 tanks completely with paint.

Each tank is in the shape of a cylinder with a top and a bottom.

The tank has a diameter of 1.6 m and a height of 1.8 m.

Jeremy has 7 tins of paint.

Each tin of paint covers 5 m2

Has Jeremy got enough paint to cover completely the 3 tanks?

You must show how you get your answer.

**(Total for Question 29/6 is 5 marks)**

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**TOTAL FOR PAPER IS 22 MARKS**