**Calculator Overlap questions June 17 Paper 3**

**15/1 E** = {odd numbers less than 30}

 *A* = {3, 9, 15, 21, 27}

 *B* = {5, 15, 25}

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

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**(4)**

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

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

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**(2)**

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**16/2** Solve the simultaneous equations

3*x* + *y* = –4

 3*x* – 4*y* = 6

*x* = .......................................................

*y* = .......................................................

**(Total for Question 16/2 is 3 marks)**

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**17/3** The table shows some information about the dress sizes of 25 women.

|  |  |
| --- | --- |
| **Dress size** | **Number of women** |
| 8 | 2 |
| 10 | 9 |
| 12 | 8 |
| 14 | 6 |

 (*a*)Find the median dress size.

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**(1)**

 3 of the 25 women have a shoe size of 7

 Zoe says that if you choose at random one of the 25 women, the probability that she has

 Either a shoe size of 7 or a dress size of 14 is  because



 (*b*)Is Zoe correct?

 You must give a reason for your answer.

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 **(1)**

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**18/4** Daniel bakes 420 cakes.

 He bakes only vanilla cakes, banana cakes, lemon cakes and chocolate cakes.

  of the cakes are vanilla cakes.

 35% of the cakes are banana cakes.

 The ratio of the number of lemon cakes to the number of chocolate cakes is 4:5

 Work out the number of lemon cakes Daniel bakes.

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**(Total for Question 18/4 is 5 marks)**

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**19/5** In the diagram, *AB*, *BC* and *CD* are three sides of a regular polygon **P**.



 Show that polygon **P** is a hexagon.

 You must show your working.

**(Total for Question 19/5 is 4 marks)**

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**20/6** The density of apple juice is 1.05 grams per cm3.

 The density of fruit syrup is 1.4 grams per cm3.

 The density of carbonated water is 0.99 grams per cm3.

 25 cm3 of apple juice are mixed with 15 cm3 of fruit syrup and

 280 cm3 of carbonated water to make a drink with a volume of 320 cm3.

 Work out the density of the drink.

 Give your answer correct to 2 decimal places.

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**(Total for Question 20/6 is 4 marks)**

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