

1 (a) The expected number of visitors to the park each day depends on the temperature.

Temperature	Expected number of visitors each day
Less than 21°C	700
21°C or more	900

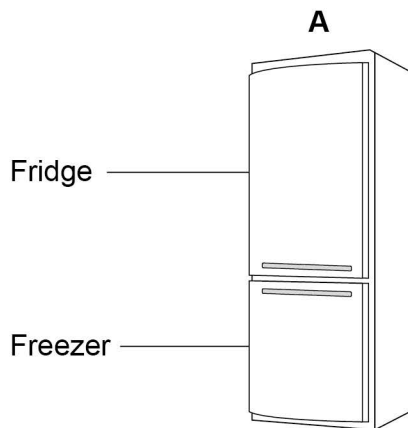
On each of the 30 days in June  
the park is open  
the probability that the temperature is less than 21°C is 0.4

Work out the **total** number of expected visitors to the park in June.

[3 marks]

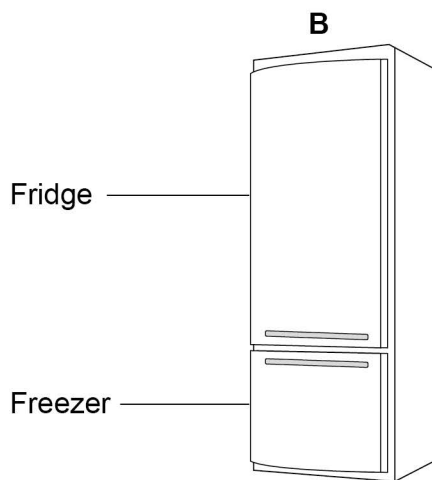
Answer \_\_\_\_\_

2 Information about two fridge-freezers, A and B, is shown.



**Total** capacity is 330 litres

fridge capacity : freezer capacity = 3 : 2



**Fridge** capacity is 294 litres

fridge capacity : freezer capacity = 7 : 3

Grace buys one of these fridge-freezers.  
She buys the one with the greater **freezer** capacity.  
Which one does she buy?  
You **must** show your working.

[4 marks]

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Answer \_\_\_\_\_

3

A town has

a population density of 278 people per km<sup>2</sup>

and

a population of 158 460

$$\text{population density} = \frac{\text{population}}{\text{area}}$$

The population increases to 168 720

Work out the population density after the increase.

**[3 marks]**

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Answer \_\_\_\_\_ people per km<sup>2</sup>

She has

- [4 marks]**

Answer \_\_\_\_\_ :

5 A company has 123 employees.  
Information about their hourly rates of pay is shown in the table.

Hourly rate, £ $p$	Number of employees
$10 \leq p < 14$	66
$14 \leq p < 20$	32
$20 \leq p < 40$	15
$40 \leq p < 100$	10
	Total = 123

The owner of the company uses the data to make two statements.

Statement A

“Over 30% of employees have an hourly rate that is more than £17”

Statement B

“The average hourly rate of pay is more than £20”

5 (a) Show working that supports **Statement A**.

[3 marks]

**5 (b)** Why might **Statement A not** be true?

[1 mark]

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**5 (c)** Work out an estimate of the mean to support **Statement B**.

[3 marks]

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**5 (d)** Why is the mean **not** the best average to represent the data?

[1 mark]

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**6**

Jing has £2450

She saves some and gives the rest to her four brothers.

money saved : money given to brothers = 2 : 5

She gives each of her **four** brothers the **same** amount.

Does each brother receive more than £430 ?

You **must** show your working.**[4 marks]**

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**7** A tank contains 40 litres of water.

**7 (a)** Water leaks out of the tank at a rate of 1.2 litres per minute.

The leak is stopped after 20 minutes.

Show that, when the leak is stopped, the tank contains 16 litres of water.

**[1 mark]**

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8 Fred bought an apartment for £137 500  
He made 8% profit when he sold the apartment.  
He used all of this profit to pay 40% of the deposit on a house.  
The deposit was one sixth of the price of the house.  
Work out the price of the house.

[4 marks]

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Answer £ \_\_\_\_\_

**9**

4 chocolate bars and 3 packets of mints cost £4.70

5 chocolate bars and 1 packet of mints cost £4.50

Work out the cost of a chocolate bar and the cost of a packet of mints.

**[4 marks]**

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chocolate bar \_\_\_\_\_

packet of mints \_\_\_\_\_

**Turn over for the next question**

10

Town A has

a population of 84 000

an area of 7 **square miles**.Town B has a population density of 4695 people per **square kilometre**.

$$\text{Population density} = \frac{\text{population}}{\text{area}}$$

Which town has the greater population density?

Use 1 square mile = 2.6 square kilometres

Tick a box.

Town A

☐

Town B

☐

Show working to support your answer.

**[3 marks]**

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