AQA – Other Summary Statistics – GCSE Statistics – 2020

1. June/2020/Paper_1F/No.7

The table shows the average cost of buying a house, a car and a basket of groceries for three different years in **Yorkshire**.

The average annual salary in Yorkshire for each year is also shown.

	Average costs for Yorkshire (£)			
Year	House	Car	Groceries	Average annual salary (£)
1966	3 609	960	1.02	829
1991	53 445	9 600	8.47	12 088
2016	144 361	21 164	13.60	27 456

Source adapted from www.hillarys.co.uk

(a)   What was the average annual salary in 1991?

[1 mark]

Answer £ _____

(b)   In 2016 groceries were just over 13 times more expensive than in 1966.

(b) (i)   Show that in 2016 houses were, on average, 40 times more expensive than in 1966.

[1 mark]

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(b) (ii)   Compare how the cost of houses, cars and groceries in Yorkshire have gone up in comparison to each other between 1966 and 2016.

You **must** show your working.

[3 marks]

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(c)   Dilip sold a house in **London** for £10 000 in 1966.

He says,

"In 2016 this house would have been worth £400 000"

(c) (i)   Show how Dilip worked out this value.

[1 mark]

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(c) (ii)   Give a reason why Dilip may be wrong.

[1 mark]

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(d)   Using 1966 as base, calculate the index number for the average cost of a car in 1991 in **Yorkshire**.

[2 marks]

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Answer _____

2. June/2020/Paper_1H/No.1

The table shows the index numbers for the cost of an item in different years.

Year	2016	2017	2018	2019
Index number	95	100	90	115

Circle the base year.

[1 mark]

2016   2017   2018   2019

3. June/2020/Paper_1H/No.12

The table shows some information about people with **hearing loss** in the UK.

Age	Number with hearing loss	UK population
60 years and over	8 290 000	15 590 000
Under 60 years	2 750 000	50 450 000
Total	11 040 000	66 040 000

Sources: ONS and actiononhearingloss.org.uk

(a)   Mike says,

"The risk of hearing loss for people aged 60 years and over is about 10 times greater than the risk for people aged under 60 years."

Comment on Mike's statement.

You **must** show your working.

[3 marks]

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(b)   About one in nine people in the UK aged over 60 years have **sight loss**.

Calculate an estimate of the number of people in the UK aged over 60 years who have sight loss.

[1 mark]

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Answer _____

4. June/2020/Paper_2H/No.3

In this question use the formula

$$birth\ rate = \frac{number\ of\ births \times 1000}{total\ population}$$

In 2017, there were 1197 births in Retford, which has a population of 23 000

Circle the birth rate to the nearest whole number.

[1 mark]

19	52	1197	19 215

5. June/2020/Paper_2F/No.9

The table shows some of the index numbers for the average prices of houses in different countries of the UK in 2015, 2016 and 2017.

The base year is 2015.

The table also shows the weightings.

Country	2015	2016	2017	Weighting
England	100	100.4	105.7	84
Wales	100	101.7	105.2	4
Scotland	100	101.6	100.6	10
Northern Ireland	100	99.3	103.4	2

Source: adapted from ONS

(a) Explain why the weighting for England is greater than the weightings for the other countries of the UK.

[1 mark]

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(b) The average price of a house in **Wales** in 2016 was £177 000

Calculate the average price of a house in Wales in **2017**.

[3 marks]

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Answer £ _____

(c) Calculate a weighted index number for the price of houses in the whole of the UK in **2017**, using 2015 as the base year.

[3 marks]

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Answer _____

(d) The table below shows the average price of a house in London in 2015 and 2017.

2015	£499 000
2017	£543 000

A newspaper claims that the average price of a house in London has increased by a greater percentage between 2015 and 2017 than houses in the UK as a whole.

Comment on the newspaper's claim.

You **must** show your working.

[2 marks]

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6. June/2020/Paper_2F/No.11

(a) In this question you will need to use,

$$\text{flu vaccination rate} = \frac{\text{number receiving vaccine}}{\text{number offered vaccine}} \times 1000$$

The table gives some information about the number of children receiving the flu vaccine in two NHS areas one winter.

NHS area	Number of children offered vaccine	Number of children receiving vaccine	Flu vaccination rate
Greater Manchester	188 500	113 100	
South East		171 800	

[Source: Public Health England]

The flu vaccination rates in Greater Manchester and the South East are equal.

Complete the table.

[3 marks]

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All young children are offered the MMR (measles, mumps and rubella) vaccine.

91% of young children in England receive the vaccine.

(b)   A child minder in England cares for 4 young children.

(b) (i)   Write down **one** assumption that must be made if the number of these children who receive the MMR vaccine follows a Binomial distribution with probability 0.91

[1 mark]

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(b) (ii)   Assuming this Binomial distribution is appropriate, calculate the probability that **at least** 3 of these 4 children receive the MMR vaccine.

[4 marks]

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Answer _____

(c)   Lara randomly selects 250 young children attending nursery schools in a city.

250 of these children receive the MMR vaccine.

Lara says,

"Children in this city are more likely to receive the MMR vaccine than children in the whole of England."

Explain why Lara may **not** be correct.

You **must** show your working.

[2 marks]

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