GCSE Statistics

Population Pyramids

Total marks available: 20

Total marks achieved: _____

Instructions
• Use black ink or ball-point pen.
• Fill in the boxes at the top of this page with your name,
centre number and candidate number.
• Answer all questions.
• Answer the questions in the spaces provided
– there may be more space than you need.
• Scientific calculators may be used.
• You must show all your working out with your answer clearly identified
at the end of your solution.

Information
• The marks for each question are shown in brackets
– use this as a guide as to how much time to spend on each question.
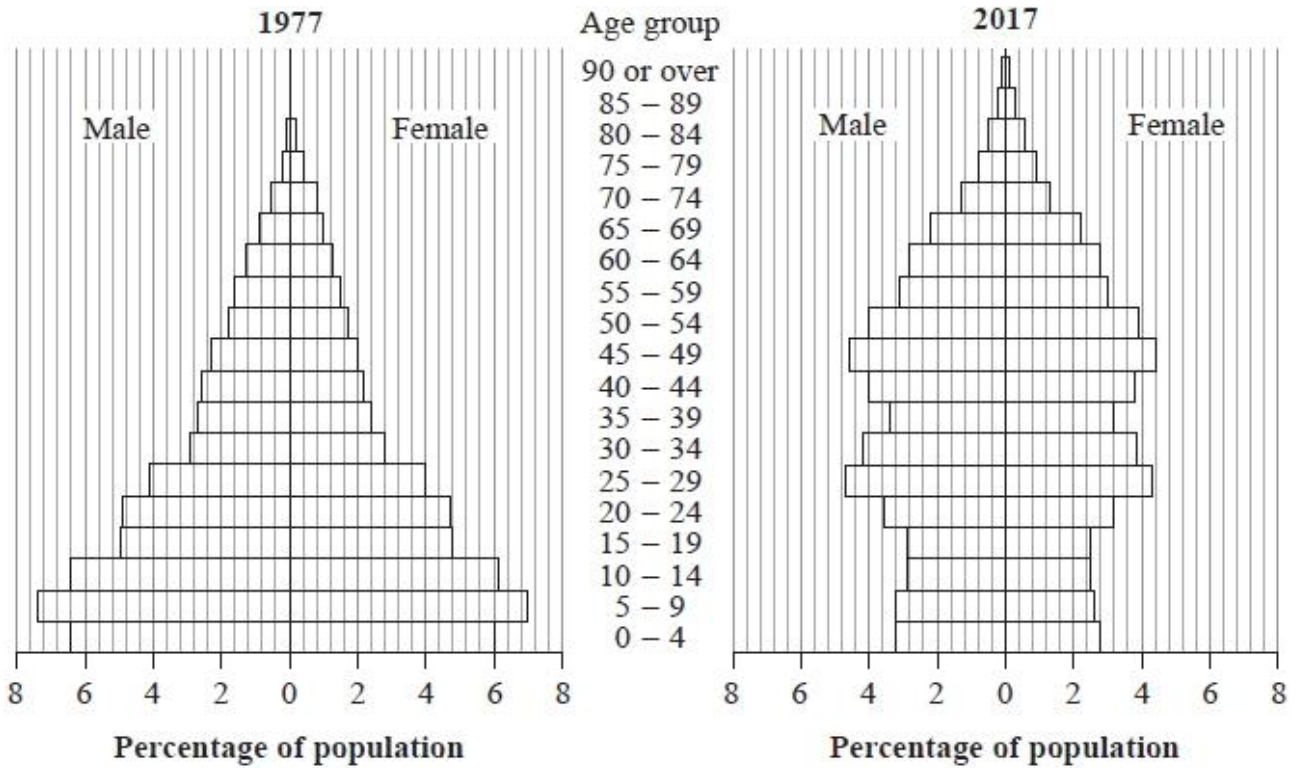
Advice
• Read each question carefully before you start to answer it.
• Try to answer every question.
• Check your answers if you have time at the end.

Q1.

The two population pyramids show the percentages of males and females in each age group in China for the years 1977 and 2017

Each percentage is based on the total population of China for that year.

(Source: *populationpyramid.net/China*)

(a) For the year 1977, write down the percentage of the population who are female in the age group 0–4 years.

.... %

(b) For the year 2017, write down the age group that has the greatest percentage of females.

....

(1)

Eric says that more than 25% of the population of China is aged 9 or under in 1977

(c) Determine whether or not Eric is correct.

You must show your working.

(3)

(d) Compare the percentages of people in China in the 60 – 64 age group in 1977 with the percentages of people in China in the 60–64 age group in 2017

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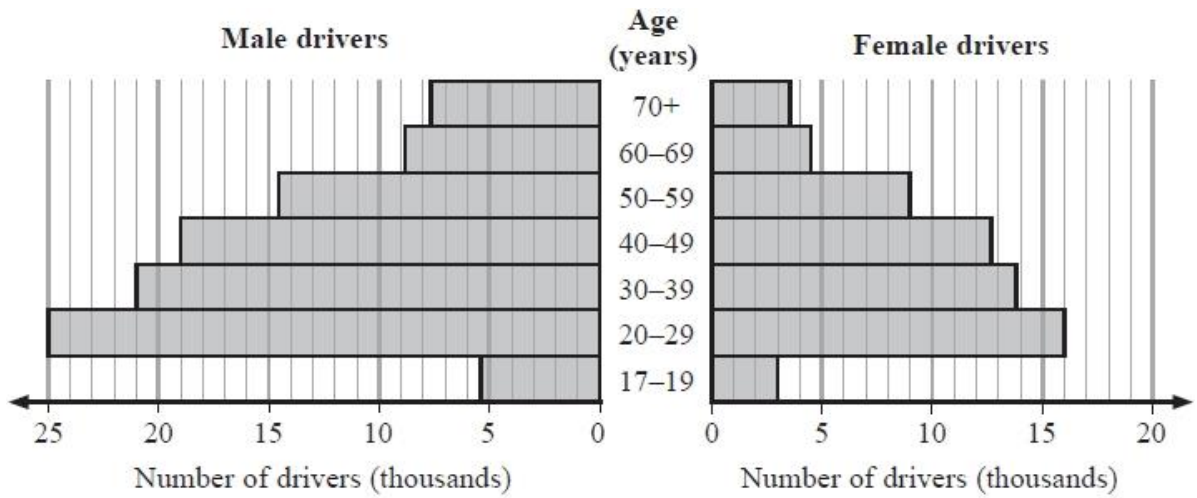
(2)

(Total for question = 7 marks)

Q2.

The population pyramid shows information about the numbers (in thousands) of drivers of each gender who made car insurance claims in the UK in 2015

(Source: *Department for Transport*)

(a) How many female drivers aged 50–59 in the UK in 2015 made car insurance claims?

.... thousand

(1)

The population pyramid shows that the age group which has the fewest number of drivers who made car insurance claims is the 17–19 age group.

(b) Suggest a reason why this should be so.

....

....

(1)

In 2014, the number of male drivers aged 20–49 in the UK who made car insurance claims was 66 700

(c) Compare the number of male drivers aged 20–49 in the UK who made car insurance claims in 2014 with the number of male drivers aged 20–49 in the UK who made car insurance claims in 2015
You must show your working.

....

....

(3)

The SafeDrive insurance company charges young male drivers more for car insurance than it charges all other drivers.

(d) Explain **two** features of the population pyramid which SafeDrive might use as its justification for doing this.

....

....

....

....

(2)

Jeremy says,

"The population pyramid shows that the total number of male drivers in the UK in 2015 is greater than the total number of female drivers in the UK in 2015"

(e) Explain whether or not Jeremy's conclusion is appropriate.

....

....

(1)

Vicki says,

"In the UK in 2019, there will be more male drivers who make car insurance claims than female drivers who make car insurance claims"

(f) Explain whether or not the information in the population pyramid can be used to support Vicki's statement.
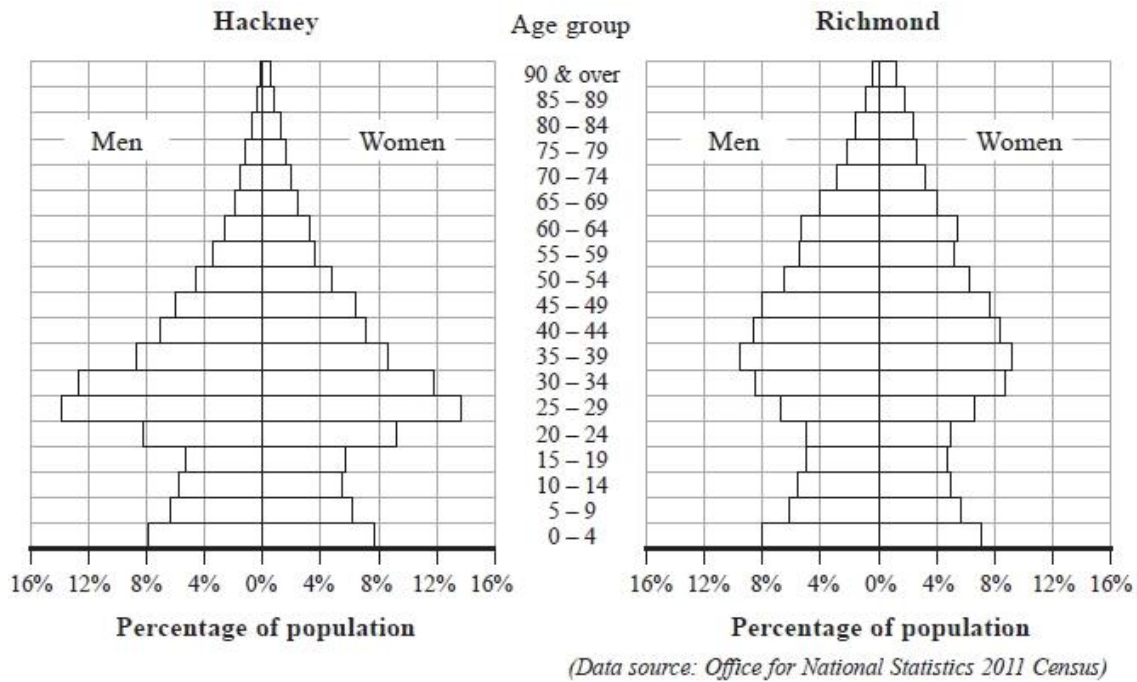
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(1)

(Total for question = 9 marks)

Q3.

The two population pyramids show the percentages of men and women in each age group in Hackney and in Richmond in 2011

(Data source: Office for National Statistics 2011 Census)

(a)   Write down the age group that has the greatest percentages of both men and women for

(i) Hackney,

....

(ii) Richmond.

....

(2)

In Richmond, 4% of men and 4% of women are in the same age group.

(b)   Write down this age group.

....

(2)

(c)   Compare the percentage of people aged 60 and over in Hackney with the percentage of people aged 60 and over in Richmond.

....

....

....

(1)

(Total for Question = 4 marks)