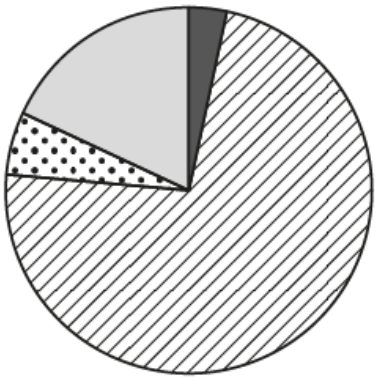
Data Presentation and interpretation – 2021/20 GCE Statistics Mathematics A

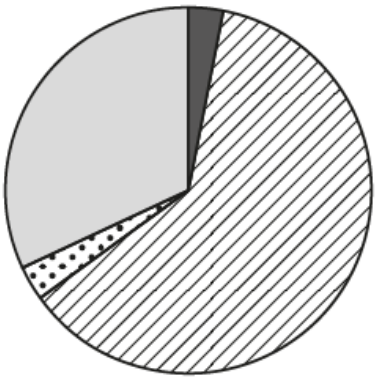
1. Nov/2021/Paper_H240/02/No.13

The four pie charts illustrate the numbers of employees using different methods of travel in four Local Authorities in 2011.

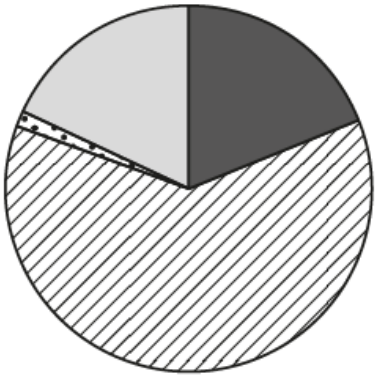
Local Authority A



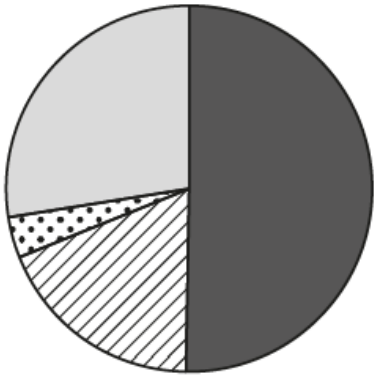
Local Authority B



Local Authority C



Local Authority D



Key:	
	Public transport
	Private motorised transport
	Bicycle
	All other methods of travel

(a) State, with reasons, which of the four Local Authorities is most likely to be a rural area with many hills. **[2]**

(b) Explain why pie charts are more suitable for answering part **(a)** than bar charts showing the same data. **[1]**

(c) Two of the Local Authorities represent urban areas.

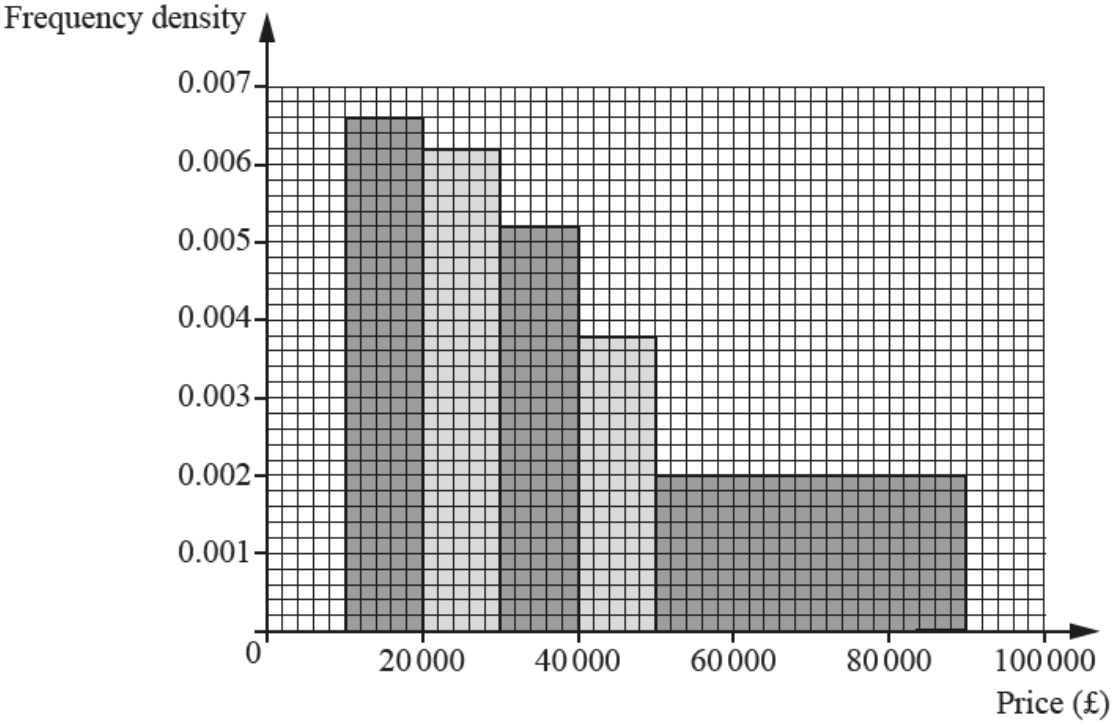
(i) State with a reason which **two** Local Authorities are likely to be urban. **[2]**

(ii) One urban Local Authority introduced a Park-and-Ride service in 2006. Users of this service drive to the edge of the urban area and then use buses to take them into the centre of the area. A student claims that a comparison of the corresponding pie charts for 2001 (not shown) and 2011 would enable them to identify which Local Authority this was.

State with a reason whether you agree with the student. **[2]**

2. Nov/2020/Paper_H240/02/No.9

The histogram shows information about the numbers of cars in five different price ranges, sold in one year at a car showroom.



It is given that 66 cars in the price range £10 000 to £20 000 were sold.

(a) Find the number of cars sold in the price range £50 000 to £90 000. **[1]**

(b) State the units of the frequency density. **[1]**

(c) Suggest one change that the management could make to the diagram so that it would provide more information. **[1]**

(d) Estimate the number of cars sold in the price range £50 000 to £60 000. **[1]**

3. Nov/2020/Paper_H240/02/No.14

Table 1 shows the numbers of usual residents in the age range 0 to 4 in 15 Local Authorities (LAs) in 2001 and 2011. The table also shows the increase in the numbers in this age group, and the same increase as a percentage.

	2001	2011	Increase	% Increase
Bolton	16 779	18 765	1 986	11.84%
Bury	11 117	12 235	1 118	10.06%
Knowsley	9 454	9 121	−333	−3.52%
Liverpool	24 840	26 099	1 259	5.07%
Manchester	24 693	36 413	11 720	47.46%
Oldham	15 196	16 491	1 295	8.52%
Rochdale	13 771	14 754	983	7.14%
Salford	12 529	16 255	3 726	29.74%
Sefton	14 896	14 601	−295	−1.98%
St. Helens	10 083	10 269	186	1.84%
Stockport	16 457	17 342	885	5.38%
Tameside	12 803	14 439	1 636	12.78%
Trafford	11 971	14 870	2 899	24.22%
Wigan	17 561	19 681	2 120	12.07%
Wirral	17 475	18 514	1 039	5.95%

Table 1

Fig. 2 shows the increase in each LA in raw numbers, and Fig. 3 shows the percentage increase in each LA.

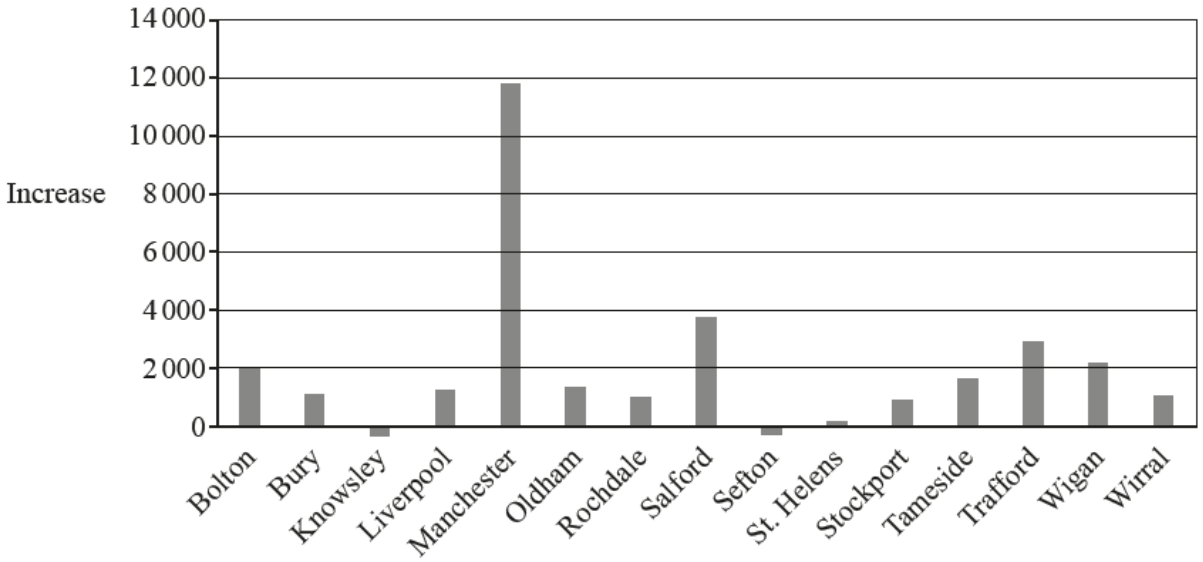


Fig. 2

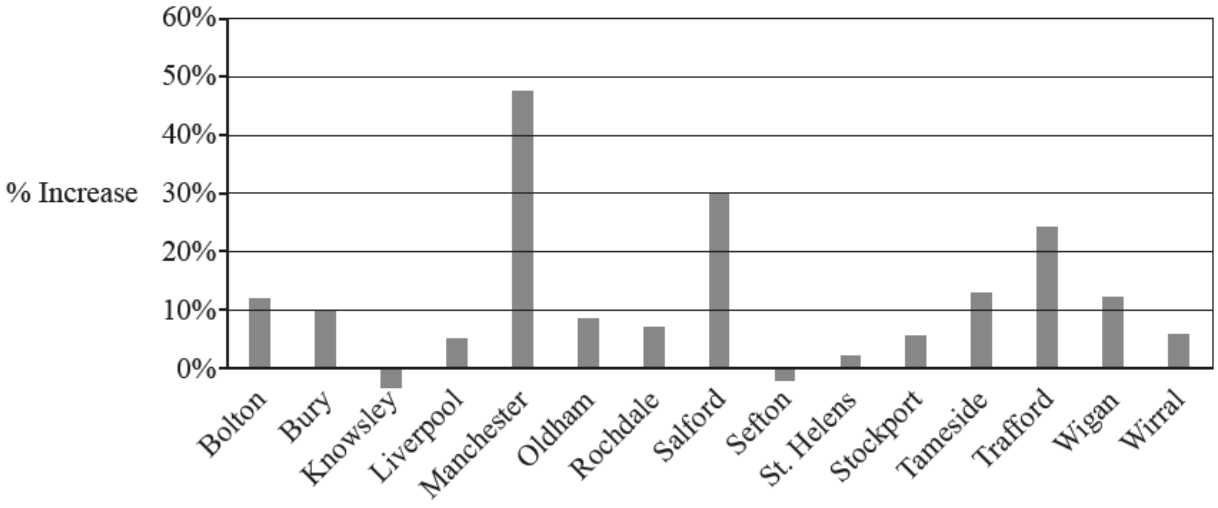


Fig. 3

(a) The Education Committees in these LAs need to plan for the provision of schools for pupils in their districts.

(i) Explain why, in this context, the increase is more important than the actual numbers. **[1]**

(ii) In which of the following LAs was there likely to have been the greatest need for extra teachers in the years following 2011: Bolton, Sefton, Tameside or Wigan?
Give a reason for your answer. **[2]**

(iii) State an assumption about the populations needed to make your answer in part **(ii)** valid. **[1]**

(b) In two of the 15 LAs the proportion of young families is greater than in the other 13 LAs.
Suggest, using only data from Fig. 2 and Fig. 3 and/or Table 1, which two LAs these are most likely to be. **[2]**