

11 The chart below represents the percentage increases (PI) in the numbers of employees using four different methods of travel to work from 2001 and 2011, in five different Local Authorities (LAs) in Wales.

Local Authority	Method of transport			
	Work mainly at or from home	Underground, metro, light rail, tram	Train	Driving a car or van
Caerphilly				
Merthyr Tydfil				
Neath Port Talbot				
Rhondda, Cynon, Taff				
The Vale of Glamorgan				

Key:

$-10\% < \text{PI} \leq +10\%$	$+10\% < \text{PI} \leq +30\%$	$+30\% < \text{PI} \leq +50\%$	$+50\% < \text{PI} \leq +90\%$	$+90\% < \text{PI}$

(a) (i) State, with a reason, which of the four methods of transport probably had the greatest overall percentage growth in these LAs between 2001 and 2011. [1]

(ii) Explain why your answer to part (a)(i) is **not** definite. [1]

(b) A student suggests that the chart can be used to estimate the total percentage change for these methods of transport in each individual LA.

Give **two** reasons why the student is likely to be wrong. [2]

(c) A student wants to investigate the trend from 2001 to 2011 in numbers using underground, metro, light rail or tram. The actual numbers of people using these methods in these LAs in 2001 were all less than 50 (and in one case was 4).

Explain why this means that the chart does **not** provide very helpful information for the student. [1]

(d) Let  $D$  denote the number of people in the Vale of Glamorgan whose usual method of travel to work is “Driving a car or van”, and let  $H$  denote the number of people in the Vale of Glamorgan who “Work mainly at or from home”.

Between 2001 and 2011 the increase in  $D$  was approximately 3.5 times the increase in  $H$ .

Use this fact and the information in the chart to estimate the ratio  $D : H$  in 2001. [3]