

**Section A**

Answer **one** question from this section.

- 1 (a) Study Fig. 1.1, which shows information about four countries in South America in 2015.

Country	Birth rate (per 1000)	Death rate (per 1000)	Net migration (per 1000)
Argentina	16.6	7.3	0.0
Brazil	14.5	6.6	-0.1
Chile	13.8	6.0	0.3
Peru	18.3	6.0	-2.5

(NB Net migration is the total number of immigrants minus the total number of emigrants.)

**Fig. 1.1**

- (i) What is meant by *birth rate*?

.....  
 .....[1]

- (ii) Using Fig. 1.1, put the four countries in rank order according to their natural population growth rate. You should rank the countries from highest to lowest.

Country	
.....	Highest natural population growth rate
.....	
.....	
.....	Lowest natural population growth rate

[2]



2 (a) Study Fig. 2.1 (Insert), which shows the urban area and surrounding rural-urban fringe of Ottawa in Canada (an MEDC).

(i) What is meant by *rural-urban fringe*?

.....  
.....[1]

(ii) Suggest **two** likely differences between the housing in areas **X** and **Y**.

1 .....

2 .....

(iii) Using evidence from Fig. 2.1, describe how the urban area of Ottawa has grown in size since 1900.

.....  
.....  
.....  
.....  
.....

-----END OF PAPER-----

1 Study the map extract for Vinstra, Norway. The scale is 1:50 000.

(a) Fig. 1.1 shows some of the features in the north of the map extract. Study Fig. 1.1 and the map extract, and answer the questions below.

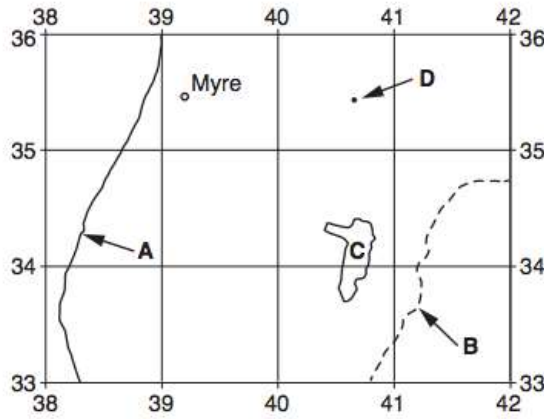


Fig. 1.1

- (i) Identify the type of road at **A**.  
 ..... [1]
- (ii) Identify feature **B**.  
 ..... [1]
- (iii) Identify feature **C**.  
 ..... [1]
- (iv) What is the height above sea level at **D**?  
 ..... metres [1]
- (v) What is the six-figure grid reference of the house at Myre, shown on Fig. 1.1? Tick **one** correct answer below.

	Tick (✓)
382355	
355392	
408366	
391354	
391355	

[2]



2 Fig. 2.1 shows the five countries expected to have the largest populations by the year 2100.

	China	India	Indonesia	Nigeria	USA
population in 2016 (billions)	1.37	1.28	0.26	0.18	0.32
estimated population in 2100 (billions)	1.09	1.55	0.36	0.91	0.46
birth rate in 2016 (per 1000)	12.49	19.55	16.72	37.64	12.49
migration in 2016 (per 1000)	-0.44	-0.04	-1.16	-0.22	+3.86

Fig. 2.1

Fig. 2.1

(a) (i) Use information from Fig. 2.1 to **plot the estimated population** of Indonesia in 2100 on Fig. 2.2 below. [1]

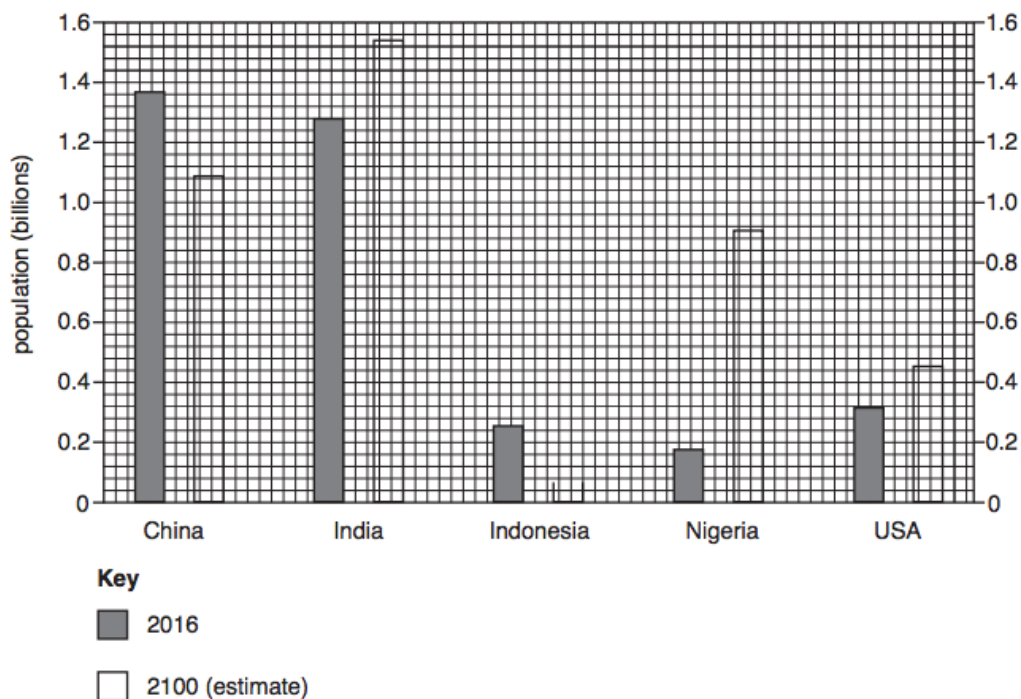


Fig. 2.2

(ii) Which country shown on Fig. 2.2 is expected to have a population decrease between 2016 and 2100?

..... [1]

(iii) Using Fig. 2.1, calculate the estimated increase in the population of USA between 2016 and 2100.

..... billion [1]

(iv) Which country shown on Figs. 2.1 and 2.2:  
had the largest population in 2016

.....

is expected to have the largest population in 2100?

..... [1]

(b) Which country shown on Fig. 2.1 is expected to have the greatest increase in population between 2016 and 2100? Use information from Fig. 2.1 to suggest the main reason for this.

Country .....

Reason .....

..... [2]

(c) (i) Is migration an important factor in the growth in population of the countries shown on Fig. 2.1? Use information from Fig. 2.1 to support your answer.

.....

.....

..... [1]

(ii) Give **one** other population statistic, not shown on Fig. 2.1, which would help explain these population changes.

-----END OF PAPER-----



- 1 Students at a college in southern England were studying how to collect weather data and if there might be relationships between weather data measurements. One group of students focused their study on rainfall. They investigated the following hypotheses:

**Hypothesis 1:** *Daily rainfall totals are influenced by the direction from which the wind is blowing.*

**Hypothesis 2:** *Daily rainfall totals are higher when atmospheric pressure is higher.*

- (a) The students decided to collect their data at 09:00 on each day in February.

Why is it important to collect data at the same time each day?

.....  
 .....[1]

- (b) The students used a rain gauge and measuring cylinder to collect rainfall data. These are shown in Fig. 1.1 (Insert).

- (i) Describe how this equipment is used to measure daily rainfall.

.....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....  
 .....[4]

- (ii) Which **two** of the following factors are important when deciding where to put the rain gauge? Tick (✓) your choices below.

Factor	Tick (✓)
away from trees to reduce interception by leaves	
on concrete to collect any rain splashing up from the ground	
on a hillside which is facing the direction the wind is blowing the rain	
next to a main road so it is easy to get to the rain gauge	
remote from people or animals which may interfere with the rain gauge	



(c) The students used a wind vane to collect data about wind direction.

(i) On Fig. 1.2 below, **complete the boxes** to show how the wind vane measures wind direction. [2]

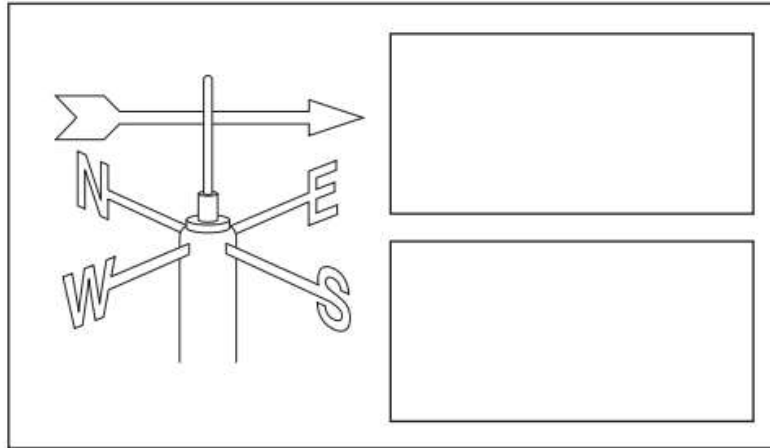


Fig. 1.2

(ii) Suggest a good position to put a wind vane and explain your choice.

.....  
.....  
.....  
.....[2]

(d) The students used their daily measurements of rainfall and wind direction to plot data onto Fig. 1.3 on page 4.

(i) On Fig. 1.3 **plot the rainfall measurements** for 4th and 27th February shown below.

Date in February	Wind direction	Total rainfall (mm)
4th	south	7.0
27th	north	4.4

[2]

Results of students' measurements of wind direction and total daily rainfall from the current year

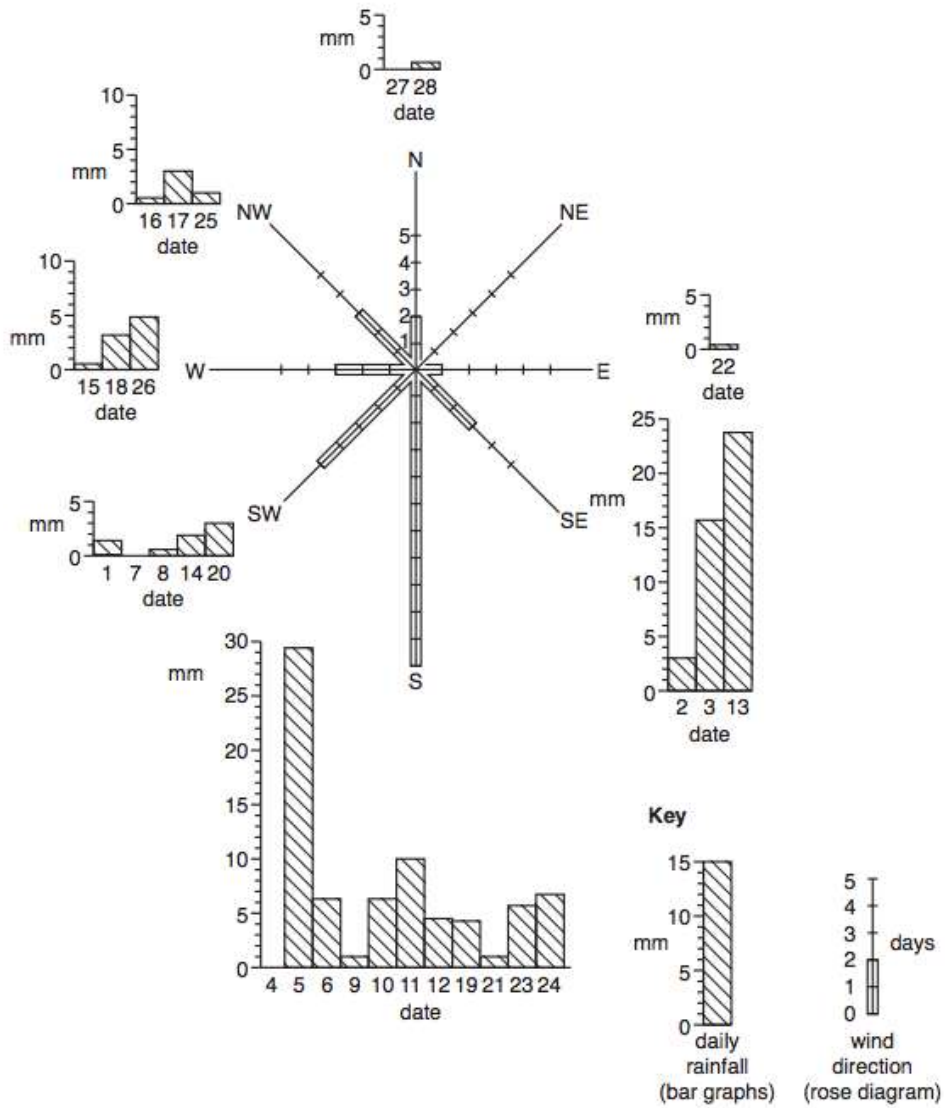


Fig. 1.3

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