



Aberdare Community School
Mathematics Department

WJEC GCSE

Higher – Calculator

Data

Misleading graphs

Name:

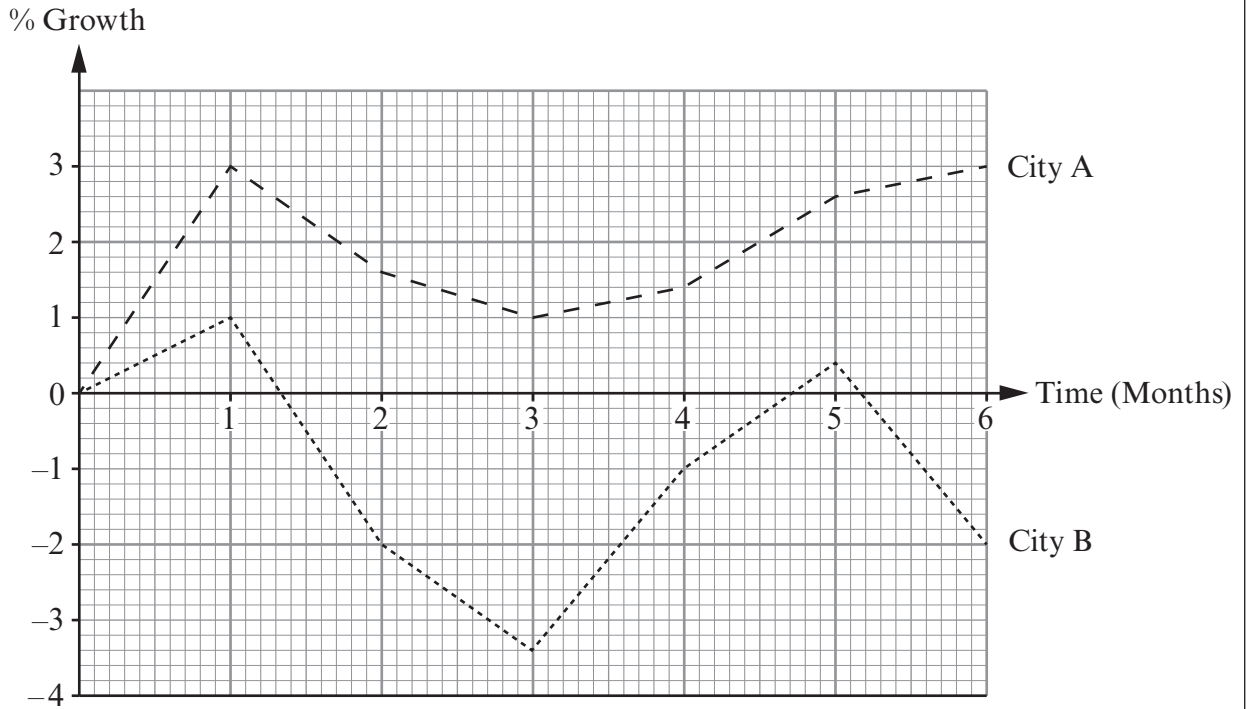
Set:

Date:

Teacher:

5. (a) A newspaper displayed a graphical representation to compare the percentage growth in reported crimes in two cities (A and B) over a period of six months.

REPORTED CRIME: % Growth in City A and City B



- (i) What is the difference in the percentage growth in reported crime between the two cities at the end of the six months?

..... [1]

- (ii) Can we say from the graph that there is more reported crime in city A than in city B? You must give an explanation for your answer.

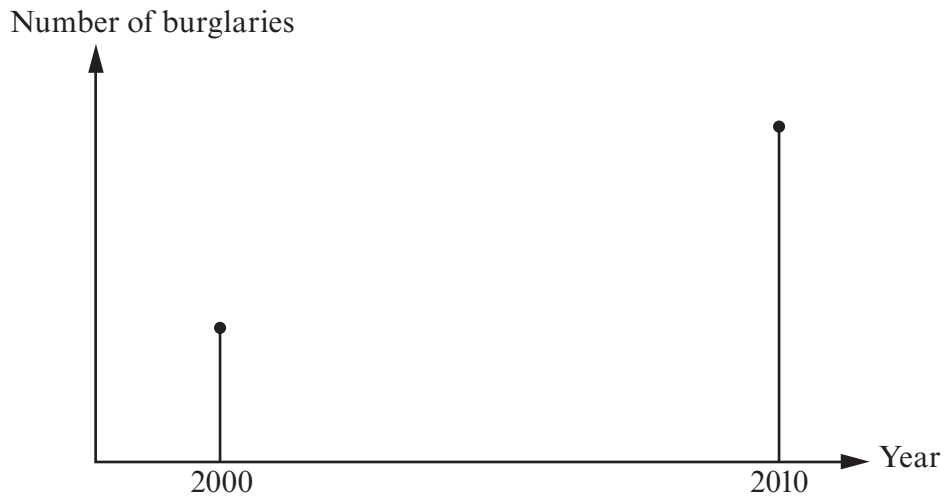
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 [1]



(b) A newspaper printed the diagram shown below with the headline

'Huge and steady increase in burglary over the last ten years'



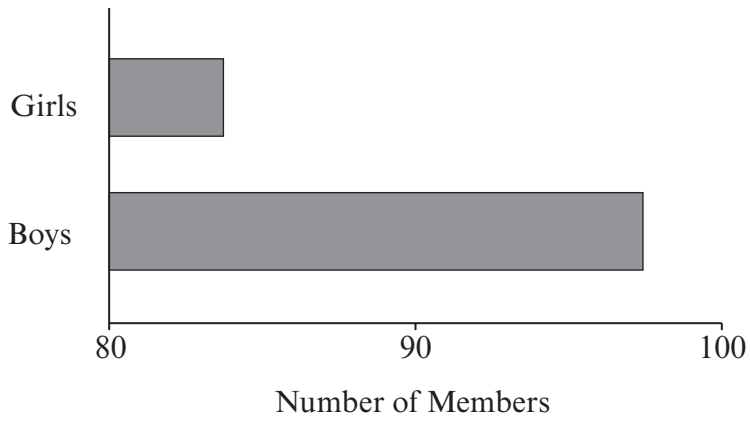
Give **two** reasons why the diagram and headline might be misleading.

- (i)
-
- (ii)
-

[2]



(b) The following diagram is intended to show the number of girls and the number of boys who are members of a youth club.



In what way could the information shown in the diagram be misunderstood?

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What is the reason for this?

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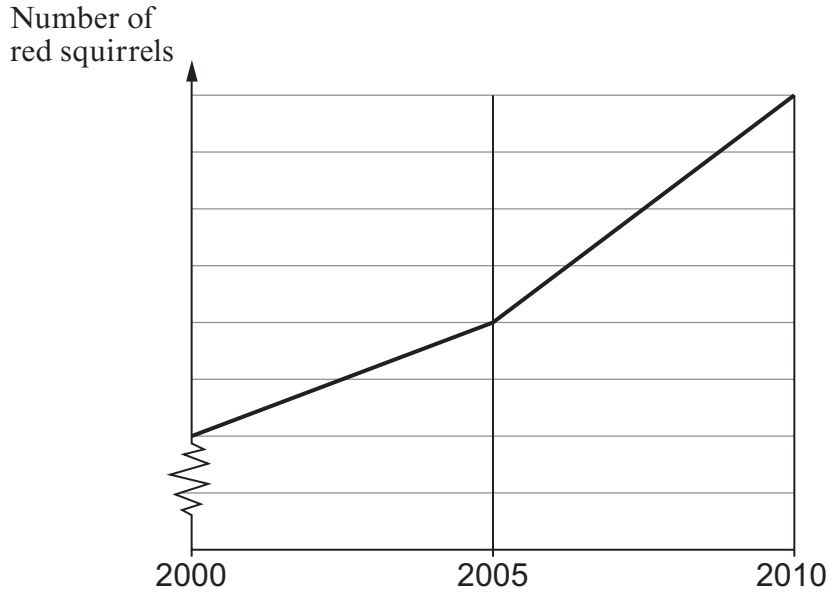
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[2]

4351
02/00/05

7. (a) The following comment and graph appeared in a newspaper.

'The number of red squirrels doubled between 2000 and 2005 and doubled again between 2005 and 2010.'



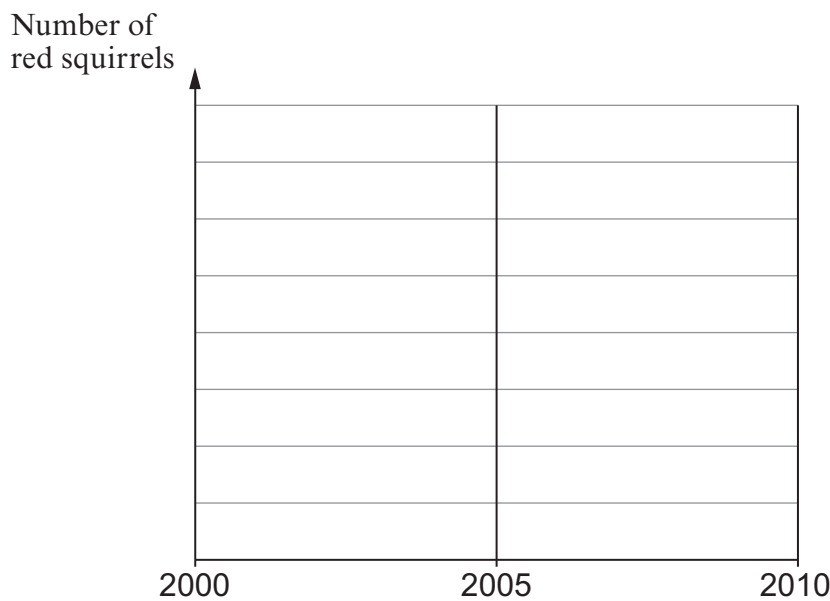
(i) Explain why it is not possible to check from the diagram whether the comment is true or not.

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[1]

(ii) There were 40 red squirrels in 2005. Complete the diagram shown below to **clearly** make the comment in the newspaper correct.

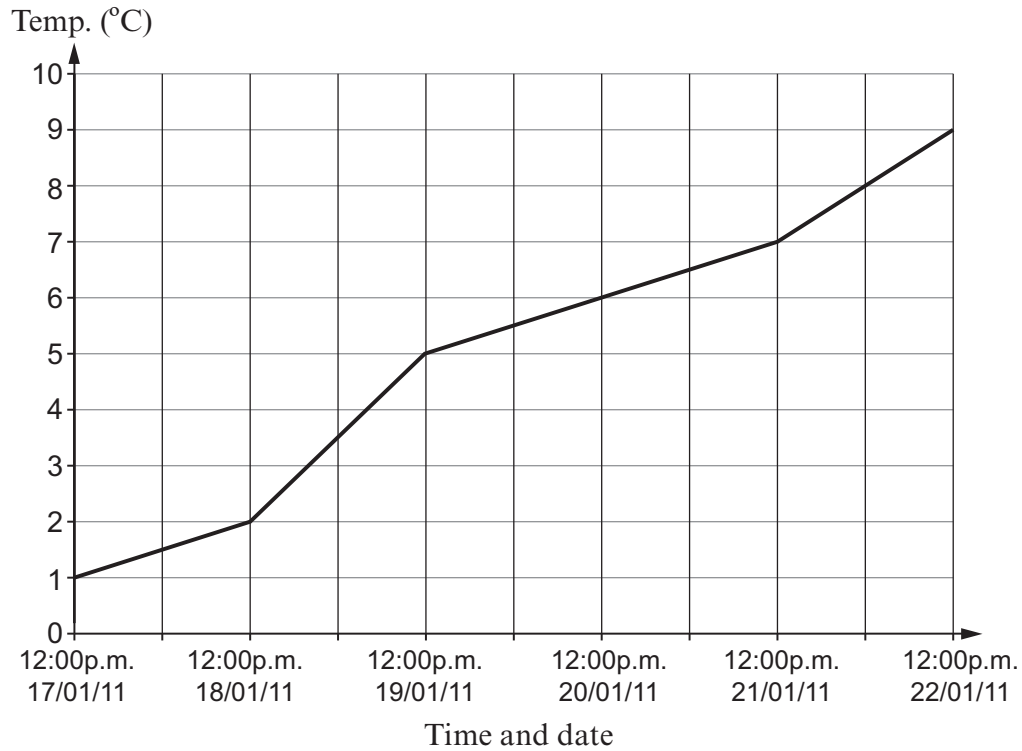


[1]



(b) In another newspaper, the following comment and graph were published.

'Temperature has risen on each of the last five days.'



How could this graph mislead you to make an incorrect temperature reading at certain times?

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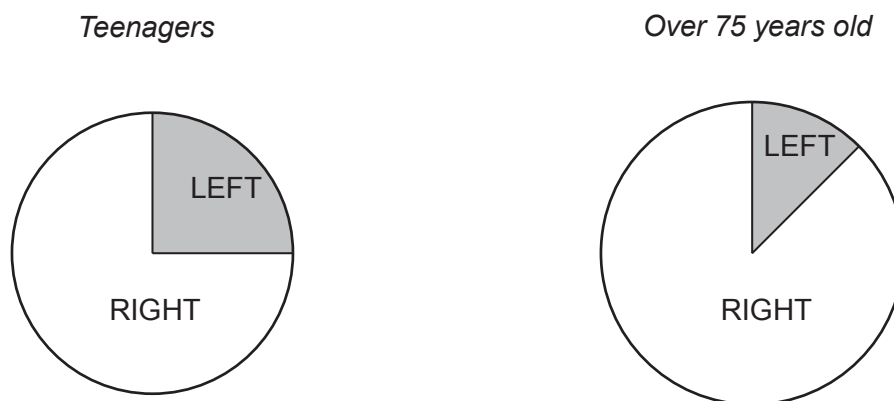
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[1]



7. (a) Clearly explain why the statements that accompany each of the following diagrams in a newspaper may not be true. Your comments should be based on the diagrams and not on your personal opinion.

- (i) Taken from an item about left-handedness. [1]



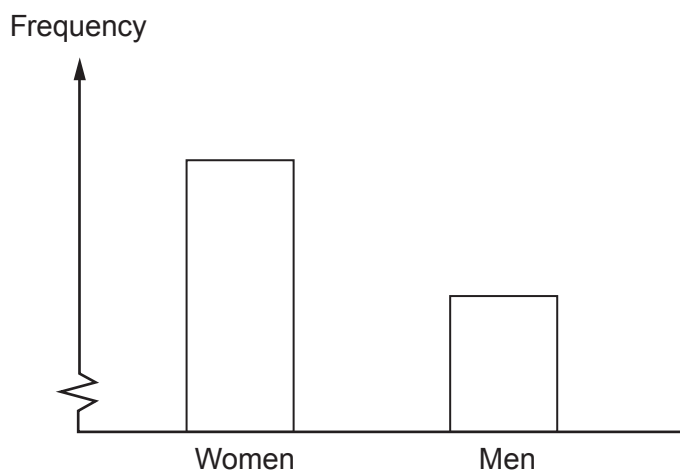
'There are twice as many left-handed teenagers as there are left-handed people over 75 years old.'

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- (ii) Taken from an item about accidents in the home. [1]



'Twice as many women as men have accidents in the home.'

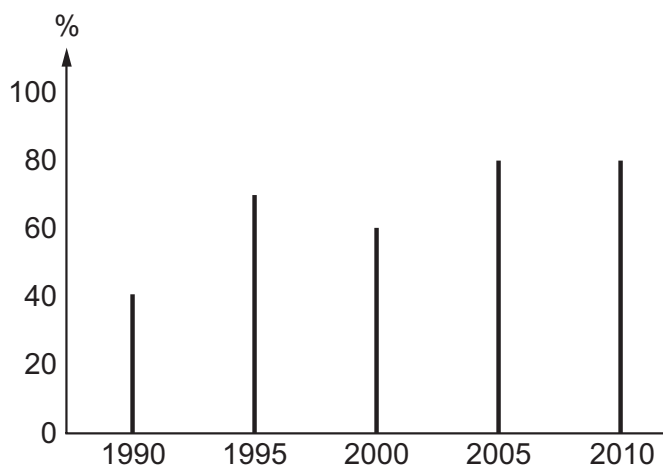
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(iii) Taken from an item about a school's examination percentage pass rates.

[1] Examiner only

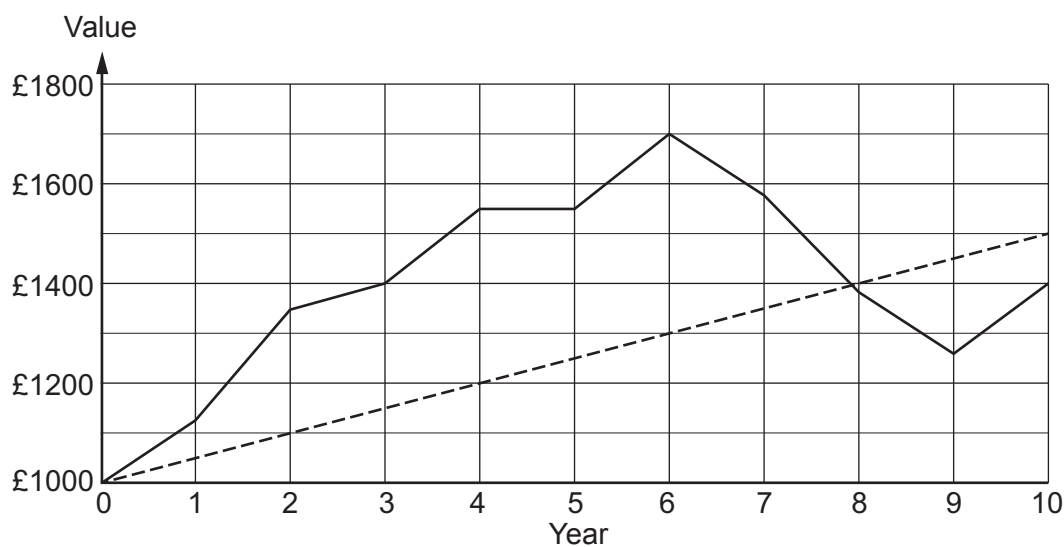


'The percentage pass rate has remained constant between 2005 and 2010.'

(b) The graph below was published in a newspaper.
The graph compares the value of an investment of £1000 in

- a company's shares (———)
- a fixed interest savings account (- - - -)

over a ten year period.



Explain clearly why the following statement is true.

[2]

'At its greatest, the difference in the value of the shares and the savings account was 40% of the investment.'

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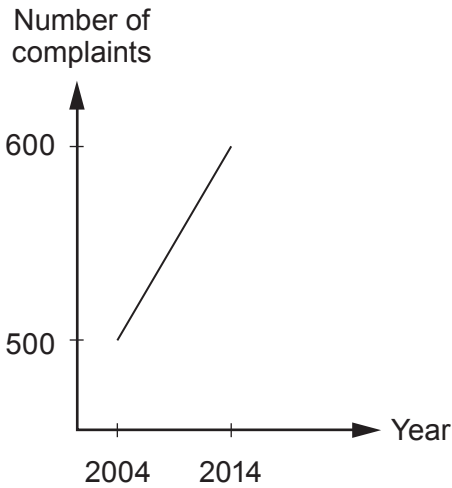
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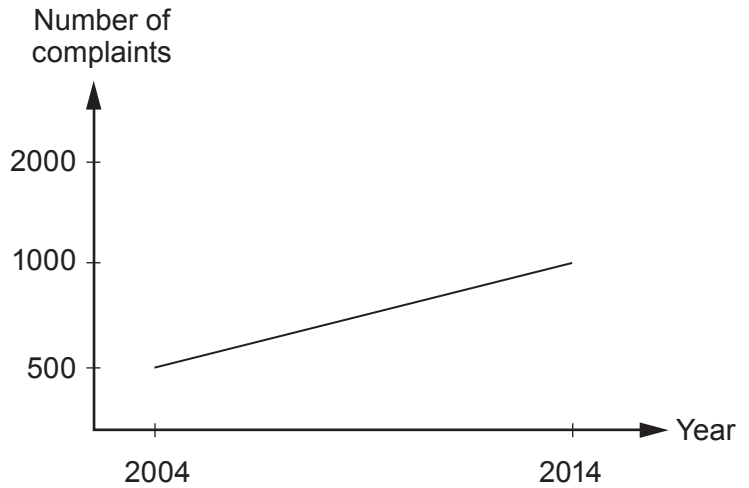
2. The district councils for Llankavani and Rossmuch have both been considering the number of complaints received from residents over a ten-year period. The graphs shown below were published in a local newspaper under the following headline.

How satisfied are you with your Council?

Llankavani Council



Rossmuch Council



- (a) Looking only at the two graph lines drawn, how could someone mistakenly think that there has been a greater increase in complaints to the Llankavani council than to the Rossmuch council? [1]

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- (b) Give **one** reason why these graphs cannot be easily compared. [1]

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- (c) On the diagram below, use a suitable uniform scale on the vertical axis and draw two lines that will show the information for Lankavani and Rossmuch. Label each line with the name of the council it represents. [3]

