



F13-10min Recognising Misleading Graphs (Foundation): 10-minute Pack

EDEXCEL 1ST0 · Calculator allowed · about 10 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

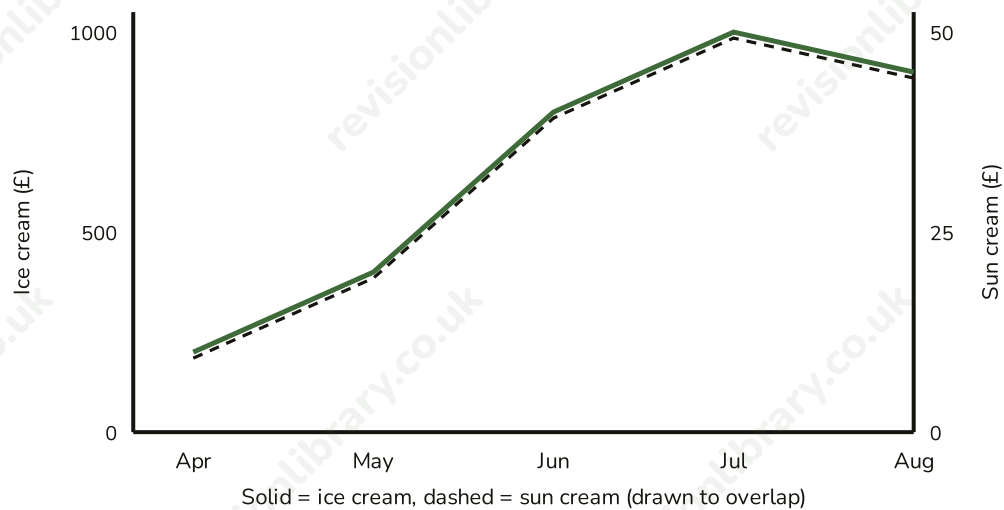
- 1** For each statement about misleading graphs, write down whether it is True or False.
- (i) A graph whose vertical axis does not start at zero can make differences between bars look bigger than they really are. **(1)**
- _____
- (ii) Adding a 3D effect to a pie chart never changes how big the slices appear to be. **(1)**
- _____
- (iii) If two graphs show the same data using different axis scales, they will always give exactly the same visual impression. **(1)**
- _____
- (iv) Choosing to show only a short time period of data, rather than the full data set, can be used to make a trend look more dramatic than it really is. **(1)**
- _____

(Total for Question 1 is 4 marks)

- 2 A shop plots its ice cream sales and sun cream sales on the same graph, over 5 months.

Month	Apr	May	Jun	Jul	Aug
Ice cream sales (£)	200	400	800	1000	900
Sun cream sales (£)	10	20	40	50	45

The graph uses a left-hand vertical axis from 0 to 1000 for ice cream sales, and a separate right-hand vertical axis from 0 to 50 for sun cream sales. Drawn this way, the two lines lie exactly on top of each other.



- (a) Using the table, work out how many times greater the ice cream sales are than the sun cream sales in April. (2)
- (b) The graph has been drawn so that the two lines lie exactly on top of each other. (2)
Explain why this could give a misleading impression to someone reading the graph.

(Total for Question 2 is 4 marks)

Mark scheme · F13-10min Recognising Misleading Graphs (Foundation): 10-minute Pack

Question 1

- (i) **B1** True cao
- **(i) Answer: True**
- (ii) **B1** False cao
- **(ii) Answer: False**
- (iii) **B1** False cao
- **(iii) Answer: False**
- (iv) **B1** True cao
- **(iv) Answer: True**

Question 2

- (a) **M1** 200 / 10, oe
- (a) **A1** 20 (times) cao
- **(a) Answer: 20 times**
- (b) **B1** identifies that the two vertical axes use very different scales (0 to 1000 for ice cream, 0 to 50 for sun cream)
- (b) **B1** explains a reader could think the two amounts are similar in size or strongly linked, without noticing the axes do not match, when ice cream sales are actually always 20 times bigger
- **(b) Answer: The left axis (0 to 1000) and right axis (0 to 50) use completely different scales, chosen so the two lines coincide; a reader glancing at the graph could think sun cream and ice cream sales are similar in size or perfectly linked, without noticing that ice cream sales are actually always 20 times bigger in pounds.**