

Please check the examination details below before entering your candidate information

Candidate surname					Other names									
Pearson Edexcel					Centre Number					Candidate Number				
Level 3 GCE					<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>					<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>				
Data Visualisation														
Statistics Advanced Topic Test														
You must have: Statistical formulae and tables booklet Calculator										Total Marks <input type="text"/>				

**Candidates may use any calculator allowed by Pearson regulations.
Calculators must not have retrievable mathematical formulae stored in them.**

Instructions

- Use **black** ink or ball-point pen.
- If pencil is used for diagrams/sketches/graphs it must be dark (HB or B).
- **Fill in the boxes** at the top of this page with your name, centre number and candidate number.
- Answer **all** questions and ensure that your answers to parts of questions are clearly labelled.
- Answer the questions in the spaces provided
– *there may be more space than you need.*
- You should show sufficient working to make your methods clear.
Answers without working may not gain full credit.
- Unless otherwise stated, inexact answers should be given to three significant figures.
- Unless otherwise stated, statistical tests should be carried out at the 5% significance level.

Information

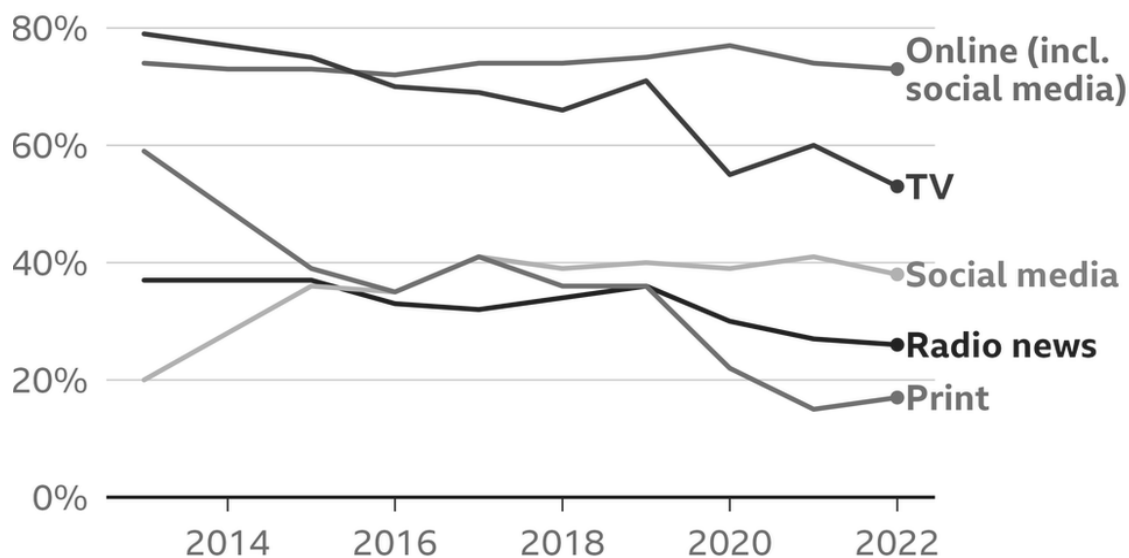
- A booklet ‘Statistical formulae and tables’ is provided.
- There are 5 questions in this question paper. The total mark for this paper is 25.
- The marks for **each** question are shown in brackets
– *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.
- If you change your mind about an answer, cross it out and put your new answer and any working underneath.

1. The graph below shows the percentage of people who look at news content between 2013 and 2022 broken down by platform.

Preferred news platform by % of people surveyed (2013-2022)



Source: Reuters Digital News Report 2022

B B C

[Source: <https://www.bbc.co.uk/news/entertainment-arts-61797444>]

Colm is a journalist who is writing an article about this graph. He is considering using the headline

"There has been a rise in people who read news in print between 2021 and 2022"

(a) Advise Colm over whether this headline is appropriate.

(2)

Colm wishes to comment on the trend of the reading of news over time for different platforms.

(b) Comment on the trend of news consumption by platform over time for

(i) social media platforms

(1)

(ii) TV

(1)

(iii) online platforms

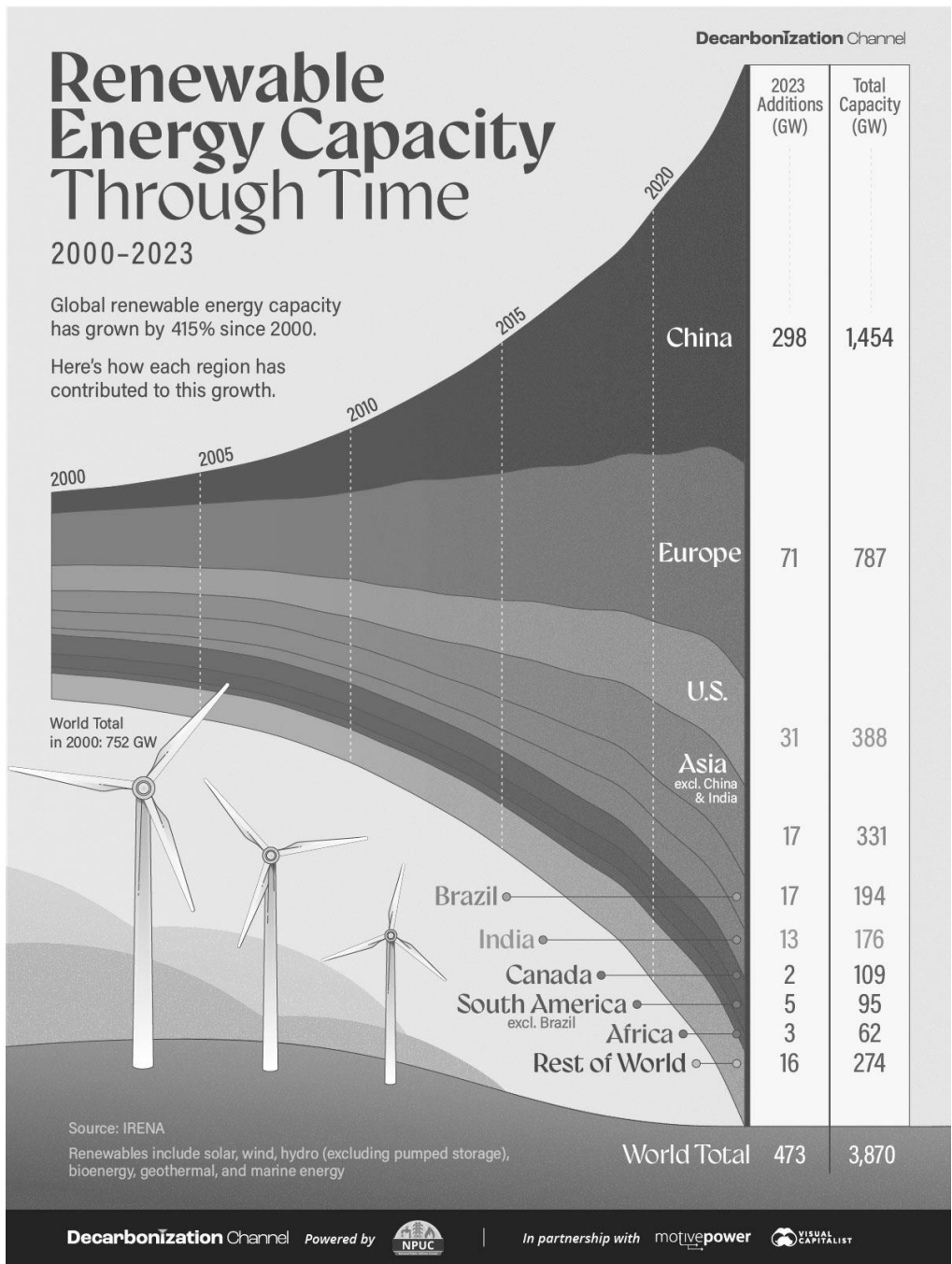
(1)

(c) Give **two** criticisms of this graph

(2)

(Total 7 marks)

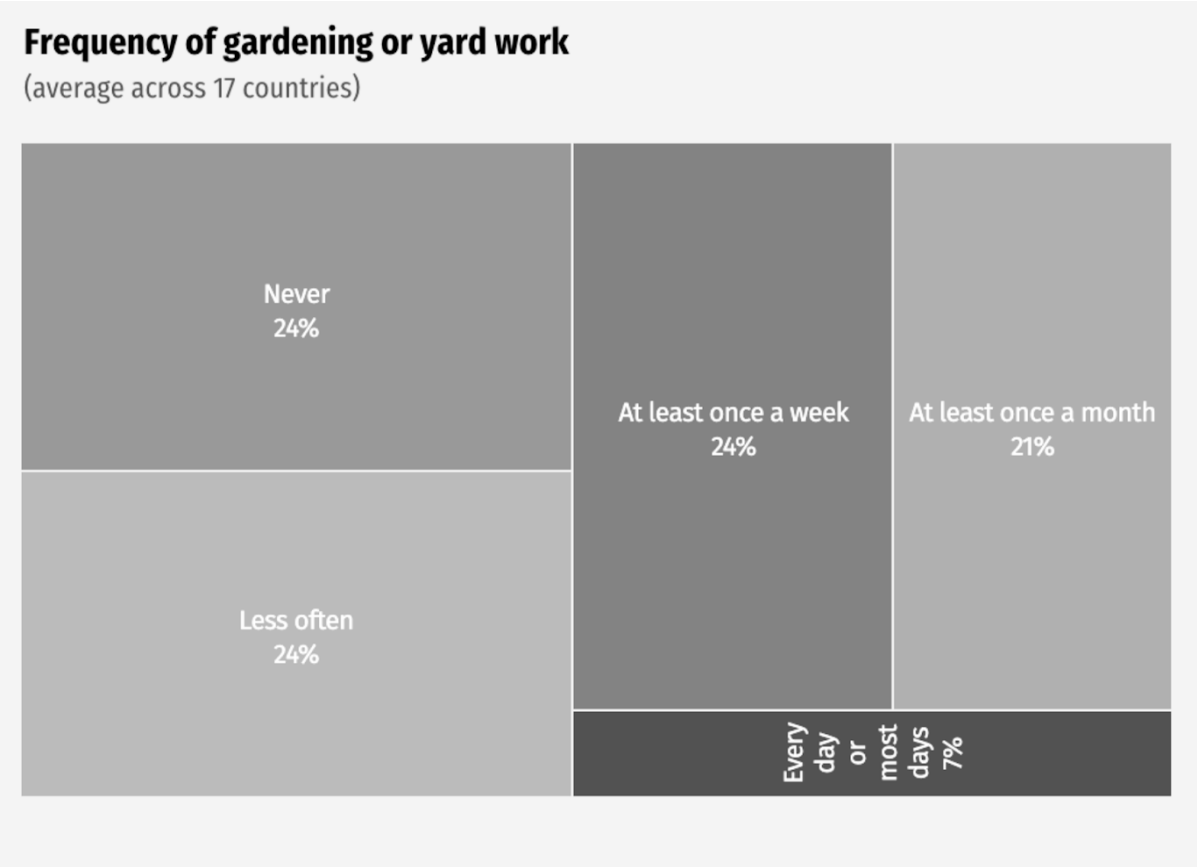
2. The graph below shows the renewable energy capacity for different areas of the world since 2000.



[Source: <https://www.visualcapitalist.com/sp/visualized-renewable-energy-capacity-through-time-2000-2023/>]

- (a) Estimate the percentage of total global renewable energy capacity which was added in 2023. (1)
- (b) Give **one** reason why this graph may be misleading. (1)
- (c) Give **one** further criticism of this graph. (1)
- (Total 3 marks)

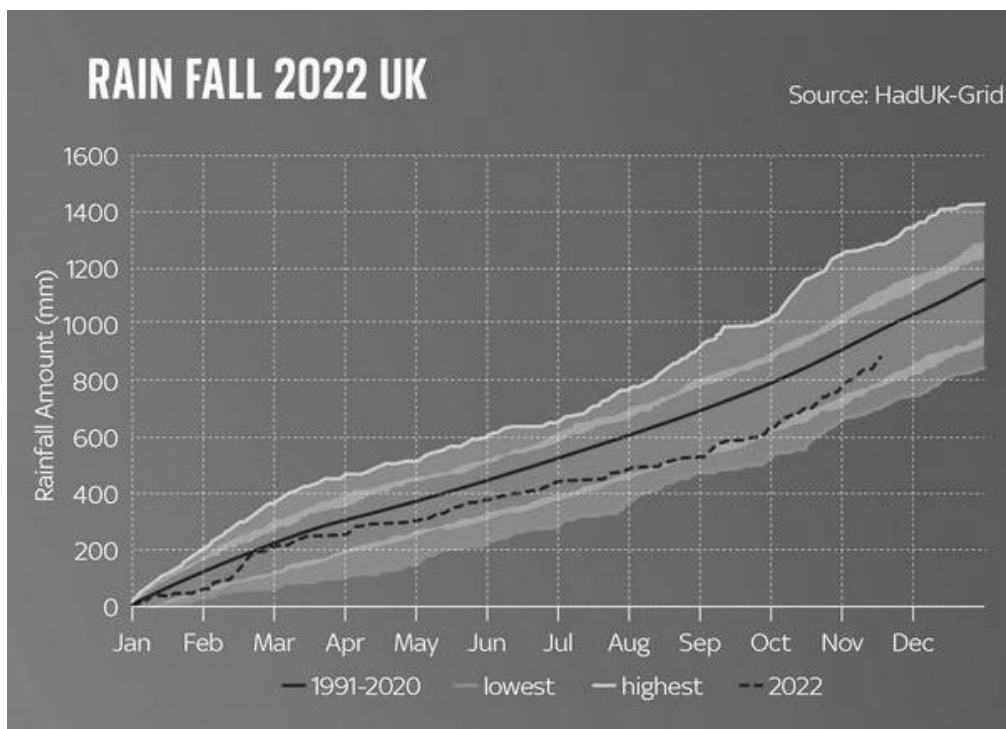
3. In 2017, a market research company asked 23000 consumers (aged 15 or over) online in 17 countries how often they do gardening or yard-work. A graphic of the results is produced.



[Source: <https://www.polymersearch.com/blog/10-good-and-bad-examples-of-data-visualization>]

- (a) How many people responded that they never did any gardening work? (1)
- (b) Give **two** criticisms of this graph. (2)
- (c) Suggest an alternative graph that would better visualise these data. (1)
- (Total 4 marks)
-

4. The graph below shows the average cumulative rainfall in the UK from January to December per year from January 1991 to November 2022



[Source: <https://news.sky.com/story/why-are-there-still-hosepipe-bans-when-its-been-raining-so-much-12750224>]

- (a) Give **one** likely interpretation of the 1991-2020 line on the diagram.

Explain the likely purpose of this line.

(2)

- (b) Use this line to compare with the cumulative rainfall in 2022.

(1)

- (c) Estimate the maximum range of cumulative rainfall by December in a year between 1991 and 2020.

(2)

- (d) Give **one** criticism about this graph.

(1)

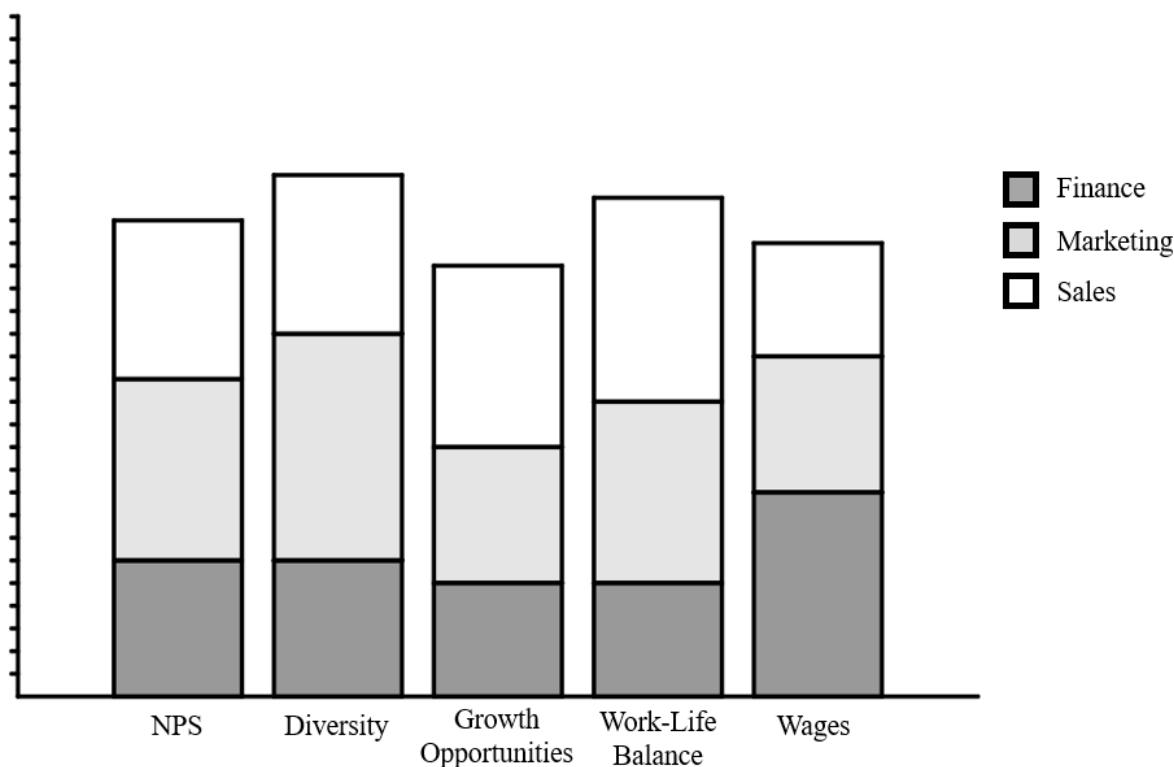
(Total 6 marks)

5. A popular online retail website conducts a survey amongst three departments (Finance, Marketing and Sales) where employees are asked to rate on a scale from 0 to 10 (10 being the most positive) aspects of their work relating to 5 areas:

- diversity,
- growth opportunities,
- work life balance,
- wages
- net promoter score
(NPS - a question asking how likely it is they would recommend working at the company)

The following diagram is produced for the average results of this survey.

Employee Satisfaction Ratings



[Source: <https://aws.amazon.com/blogs/business-intelligence/visualize-multivariate-data-using-a-radar-chart-in-amazon-quicksight/>]

- (a) Make **three** comments about the data in this diagram. (3)
- (b) (i) give **one** advantage of using this diagram to display these data, (1)
- (ii) give **one** disadvantage of using this diagram to display these data. (1)
- (Total 5 marks)

TOTAL FOR PAPER: 25 MARKS