JRA Tutors
Private tuition and small online Study Pods

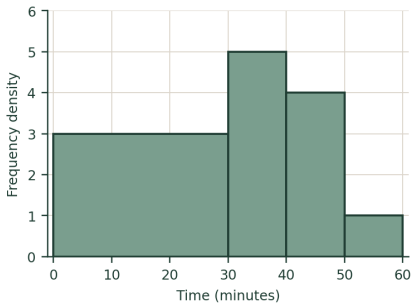
Histograms

Grade 7 topic · Higher tier · Edexcel and AQA

How to use this pack
20 questions that get harder as you go. Questions 1–15 (51 marks) build up to the harder Grade 8–9 style questions at the end; aim to complete all 20. Show your working on the lines and write your final answer on the answer line, then mark yourself with the answers at the back. Diagrams are not drawn accurately. Total: 70 marks.

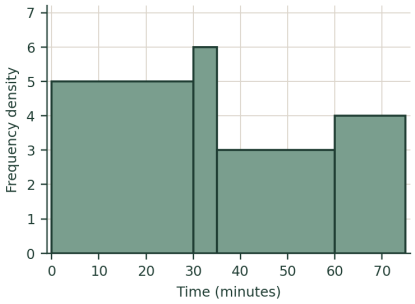
Warm-up

1 The histogram shows the times taken by some students. Work out the frequency of the class 0–30. **[3 marks]**



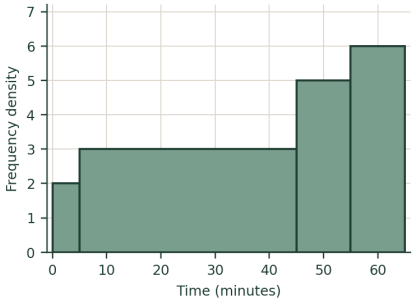
Answer _____

2 The histogram shows the times taken by some students. Work out the frequency of the class 30–35. **[3 marks]**



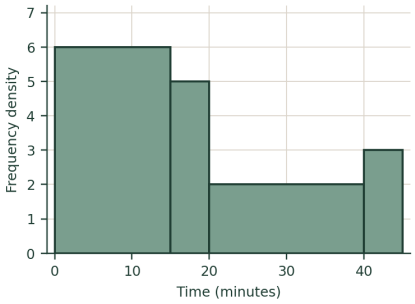
Answer _____

3 The histogram shows the times taken by some students. Work out the frequency of the class 45–55. **[3 marks]**



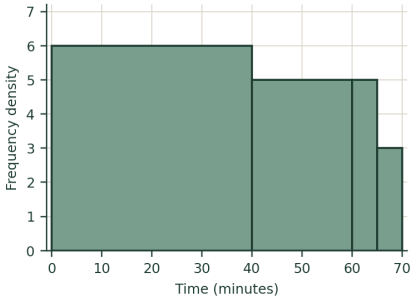
Answer _____

4 The histogram shows the times taken by some students. Work out the frequency of the class 40–45. **[3 marks]**



Answer _____

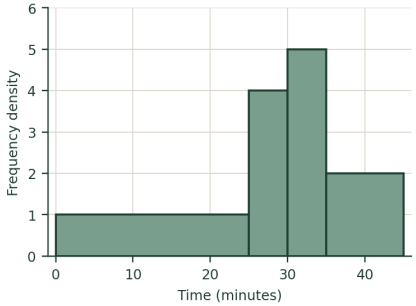
5 The histogram shows the times taken by some students. Work out the frequency of the class 0–40. **[3 marks]**



Answer _____

Core

6 The histogram shows the times taken by some students. How many students are there in total? **[4 marks]**



Answer _____

7 The histogram shows times. Work out the frequency density of a class with frequency 30 and width 5. **[3 marks]**

Answer _____

8 Complete the frequency density for each class of this table: frequencies 50, 100, 20, 30 with widths 25, 25, 20, 10. **[4 marks]**

Answer _____

9 Work out the class width given a frequency of 30 and a frequency density of 3. **[3 marks]**

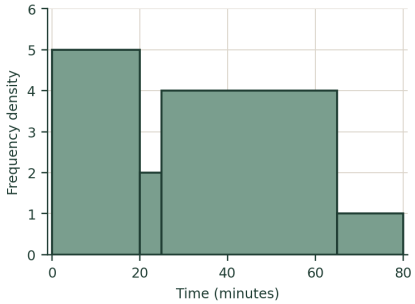
Answer _____

10 The histogram has a bar of height 2 over 5–15. Work out the number of students in this class. **[3 marks]**

Answer _____

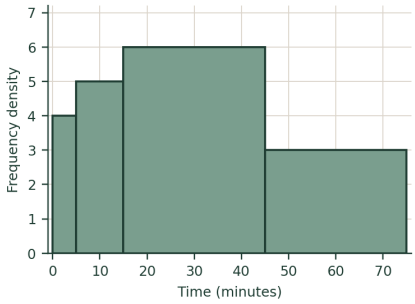
Stretch

11 What percentage of students took longer than 25 minutes? Give your answer to 1 d.p. **[4 marks]**



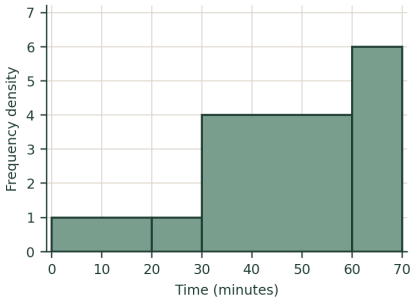
Answer _____

12 Work out the mean time using the midpoints of each class. Give your answer to 1 d.p. **[5 marks]**



Answer _____

13 The total frequency is 210. What fraction took less than 30 minutes? Give your answer in simplest form. **[4 marks]**



Answer _____

14 The frequency density of a bar is 10 and its class width is 5. Work out the frequency. **[3 marks]**

Answer _____

15 Explain why a histogram uses frequency density instead of frequency. **[3 marks]**

Answer _____

Challenge

16 A histogram has classes 0–10 (density 1) and 10–15 (density 5). Work out the ratio of the two frequencies in simplest form. **[5 marks]**

Answer _____

17 The bars of a histogram have areas 12, 20 and 8. How many values in total? **[3 marks]**

Answer _____

18 A bar covers 25–50 with density 6. Estimate the frequency in the first half of that class. **[5 marks]**

Answer _____

19 A histogram bar has width 10 and frequency density 3. Work out the frequency. **[3 marks]**

Answer _____

20 A histogram bar has width 10 and frequency density 3. Work out the frequency. **[3 marks]**

Answer _____