Histograms

You should remember from GCSE that there are some important differences between bar charts and histograms. We will consider 4 important skills.



Example

1. Calculate the missing values in the table below

|  |  |  |
| --- | --- | --- |
| **Weight (w kg)** | **Frequency** | **Frequency Density** |
| 0 < w ≤ 10 | 40 |  |
| 10 < w ≤ 15 | 6 |  |
| 15 < w ≤ 35 |  | 2.6 |
| 35 < w ≤ 45 |  | 1 |

1. Calculate the frequencies



1. **Let’s consider the area of the bars:**

**Example**



**Test Your Understanding**

A policeman records the speed of the traffic on a busy road with a 30 mph speed limit. He records the speeds of a sample of 450 cars. The histogram in Figure 2 represents the results.

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 (*a*) Calculate the number of cars that were exceeding the speed limit by at least 5 mph in the sample. *(4 marks)*

(b) Estimate the value of the mean speed of the cars in the sample. *(3 marks)*

(*c*) Estimate, to 1 decimal place, the value of the median speed of the cars in the sample.(2)

1. **Let’s Consider the gaps between the classes:**

Example



1. **Let’s consider the width and height on the diagram**

An exam favourite is to ask what width and height we’d draw a bar in a drawn histogram.

Example:

The frequency table shows some running times. On a histogram the bar for 0-4 seconds is drawn with width 6cm and height 8cm. Find the width and height of the bar for 4-6 seconds.

|  |  |
| --- | --- |
| **Time (seconds)** | **Frequency** |
| $$0\leq t<4$$ | $$8$$ |
| $$4\leq t<6$$ | $$9$$ |

Tip:

 0 -4 class

Class width = Drawn width = Scaling =

Frequency Density (height) = Drawn height = Scaling =

4-6 class:

Test Your Understanding



1. **Forming a frequency polygon**





Exercise 3D Pg 50

Supplementary questions on printed sheet

Exercise 3E Pg 53