

Calculating Frequency from a Histogram

Starter

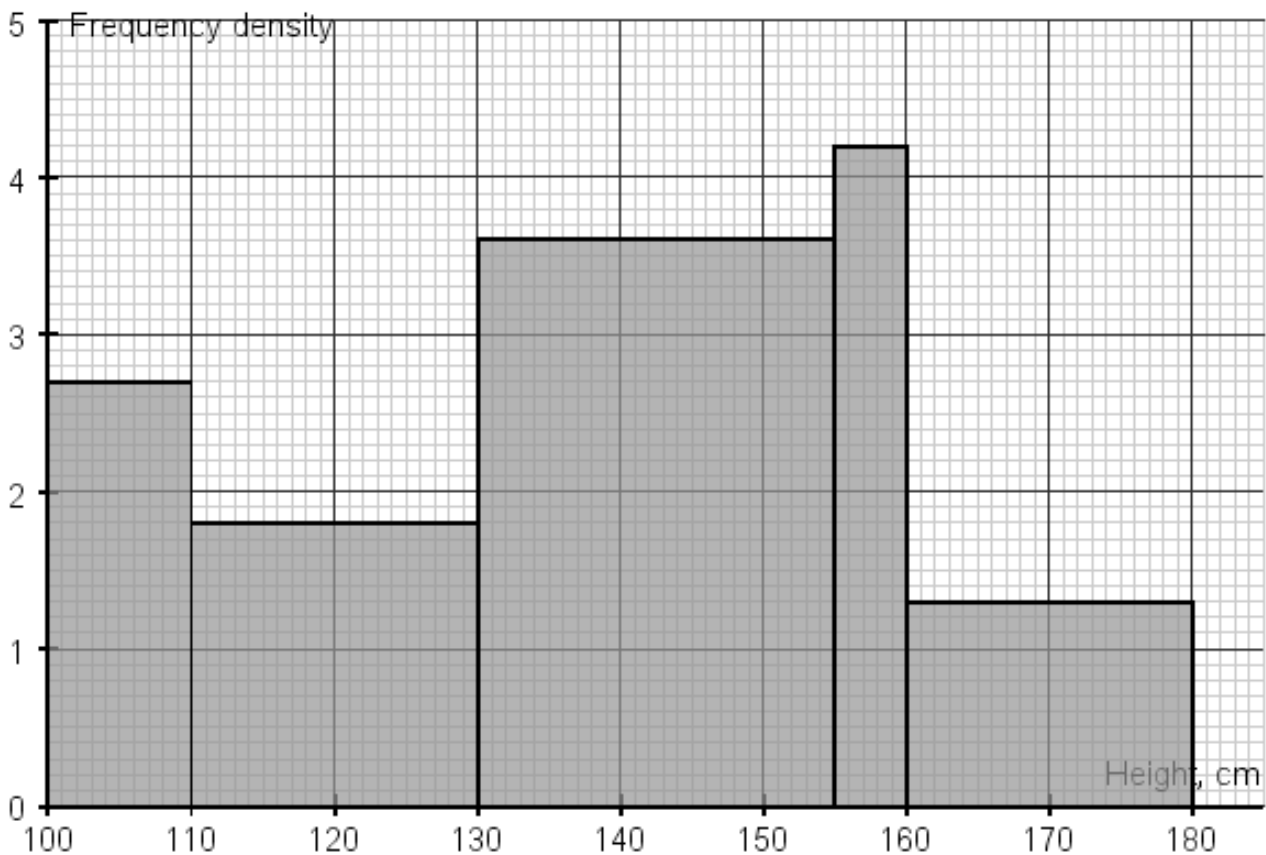
1. **(Review of last lesson)** Calculate the height of the bar of a histogram whose class interval is $6 \leq w < 10$ and whose frequency is 28.
2. **(Review of last lesson)** The height of a bar on a histogram is 15. The interval goes from 125cm to 130cm. Calculate the frequency of the bar.

Notes

In questions, you can be given the histogram and asked to find the frequencies.

Remember: **Area of bar = Frequency**

E.g. 1 This is a histogram showing the heights of a group of people. Calculate the frequency for each interval



Working: Reading the vertical scale, the frequency density can be filled in.

Height, cm	Frequency	Frequency density
$100 \leq h < 110$		2.7
$110 \leq h < 130$		1.8
$130 \leq h < 155$		3.6
$155 \leq h < 160$		4.2
$160 \leq h < 180$		1.3

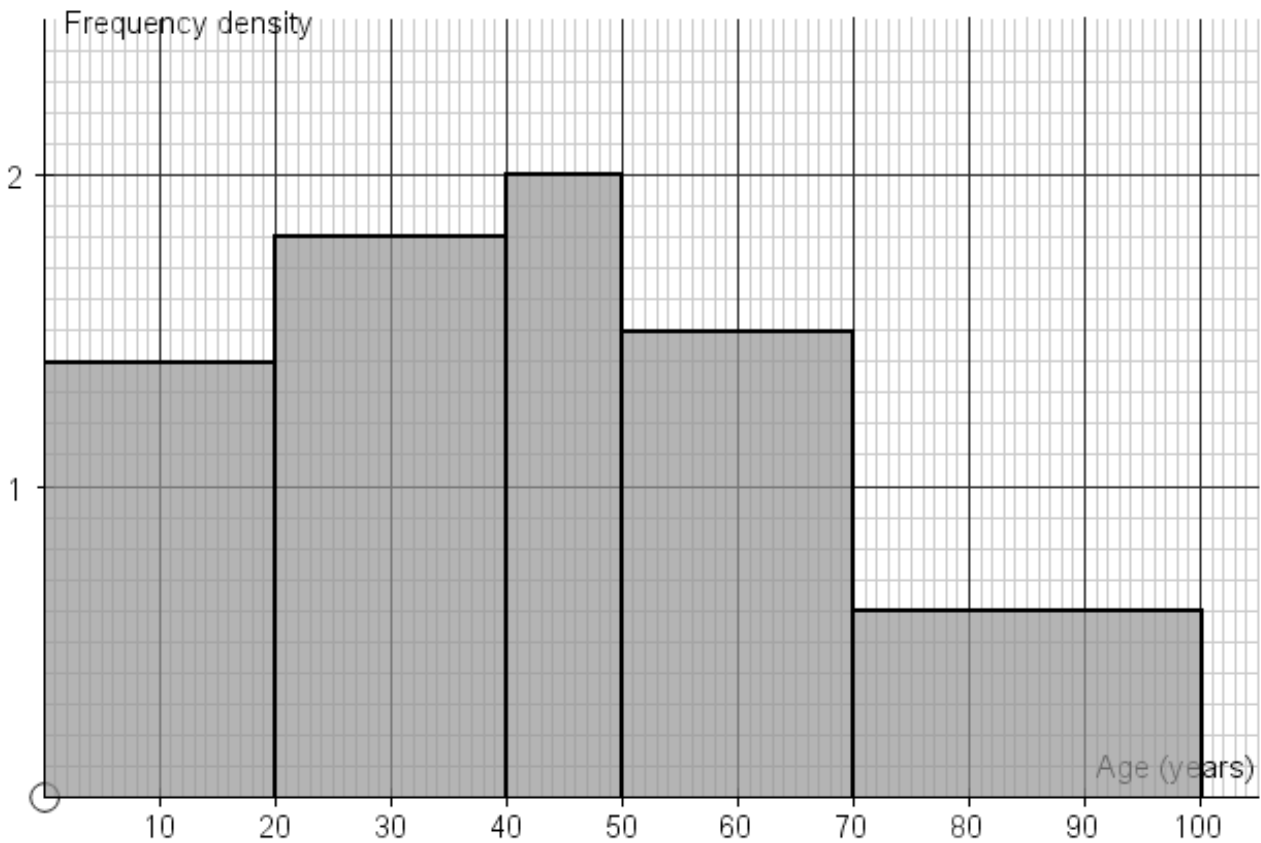
Frequency = Frequency density \times Class width

For $100 \leq h < 110$: Frequency = $2.7 \times 10 = 27$

For $110 \leq h < 120$: Frequency = $1.8 \times 20 = 36$ etc.

Height, cm	Frequency	Frequency density
$100 \leq h < 110$	27	2.7
$110 \leq h < 130$	36	1.8
$130 \leq h < 155$	90	3.6
$155 \leq h < 160$	21	4.2
$160 \leq h < 180$	26	1.3

E.g. 2 This is a histogram showing the ages of passengers travelling on a flight to New York. Calculate the frequency for each class.



Video:

[Finding frequencies from histograms](#)

Video:

[Reading histograms](#)

[Solutions to Starter and E.g.s](#)

Exercise

9-1 class textbook: p489 E14.5 Qu 1-3
A*-G class textbook: p445 E14.2 Qu 1-3
9-1 homework book: p168 E14.5 Qu 1
A*-G homework book: p126 E14.2 Qu 1

Summary

Area of the bar equals the frequency of the group.

$$\text{Frequency density} = \frac{\text{Frequency}}{\text{Class width}}$$

[Homework book answers \(only available during a lockdown\)](#)

