

Histograms

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Worked example

Complete the table

Height (cm)	Frequency	Frequency density
$140 < x \leq 155$		0.4
$155 < x \leq 175$		0.7
$175 < x \leq 185$	6	
$185 < x \leq 190$	21	

Weight (kg)	Frequency	Frequency density
$60 < x \leq 75$		1.4
$75 < x \leq 85$	22	
$85 < x \leq 105$		2.3
$105 < x \leq 110$	31	

Your turn

Complete the table

Height (cm)	Frequency	Frequency density
$140 < x \leq 155$	3	0.2
$155 < x \leq 175$	14	1.4
$175 < x \leq 185$	3	0.3
$185 < x \leq 190$	42	8.4

Worked example

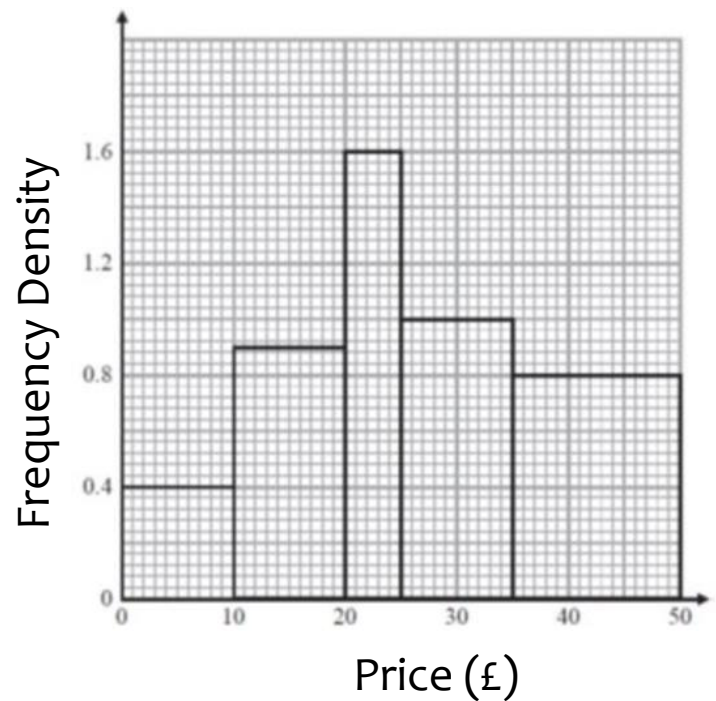
Plot a histogram

Height, x (cm)	Frequency
$140 < x \leq 155$	6
$155 < x \leq 175$	14
$175 < x \leq 185$	6
$185 < x \leq 190$	21

Your turn

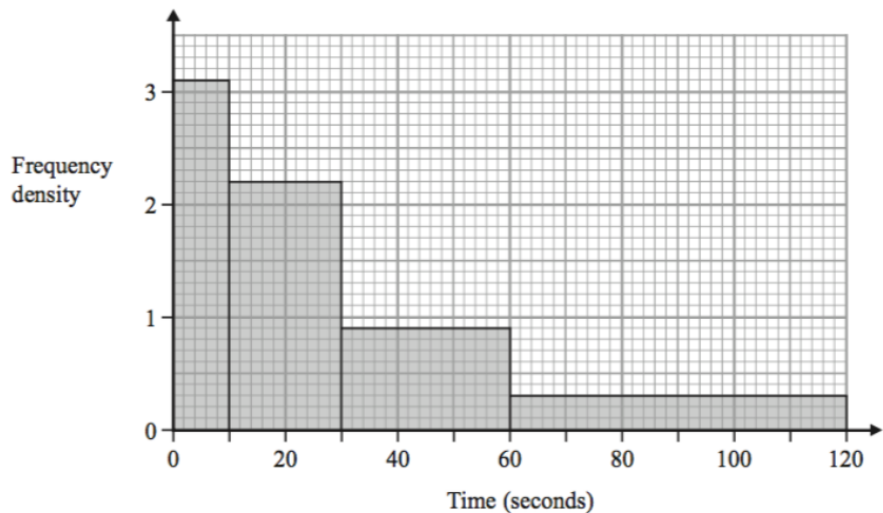
Plot a histogram

Price, y (£)	Frequency
$0 < y \leq 10$	4
$10 < y \leq 20$	9
$20 < y \leq 25$	8
$25 < y \leq 35$	10
$35 < y \leq 50$	12



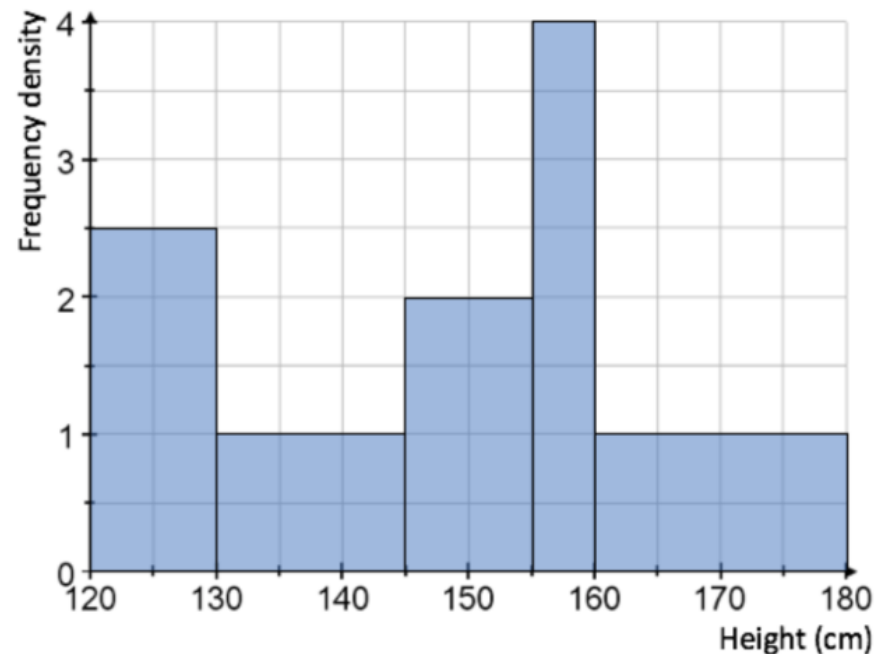
Worked example

Draw a frequency table from the histogram



Your turn

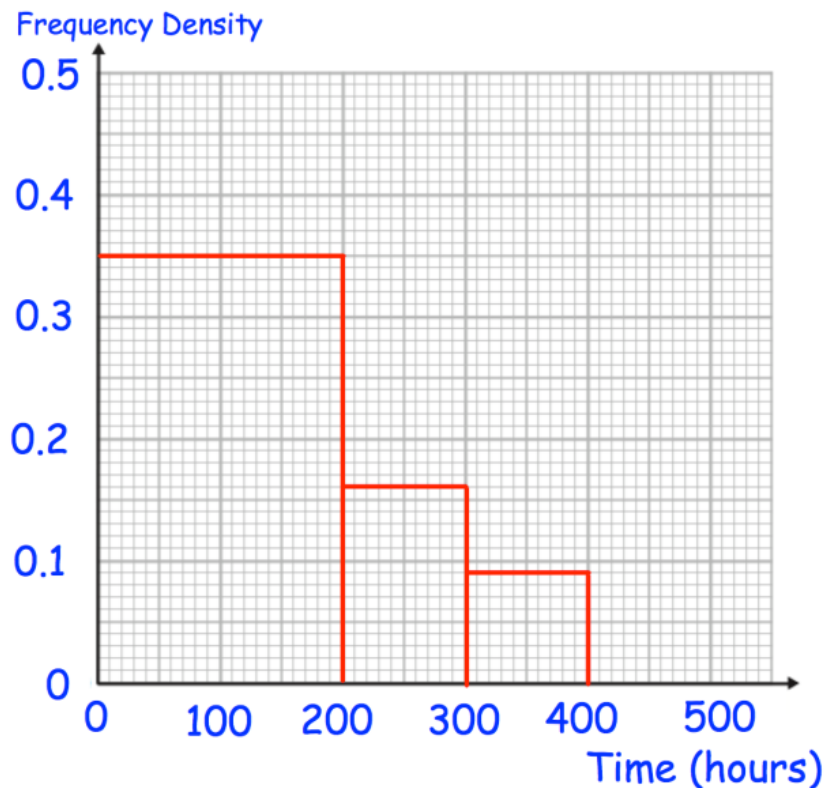
Draw a frequency table from the histogram



Height, y (cm)	Frequency
$120 < y \leq 130$	25
$130 < y \leq 145$	15
$145 < y \leq 155$	20
$155 < y \leq 160$	20
$160 < y \leq 180$	20

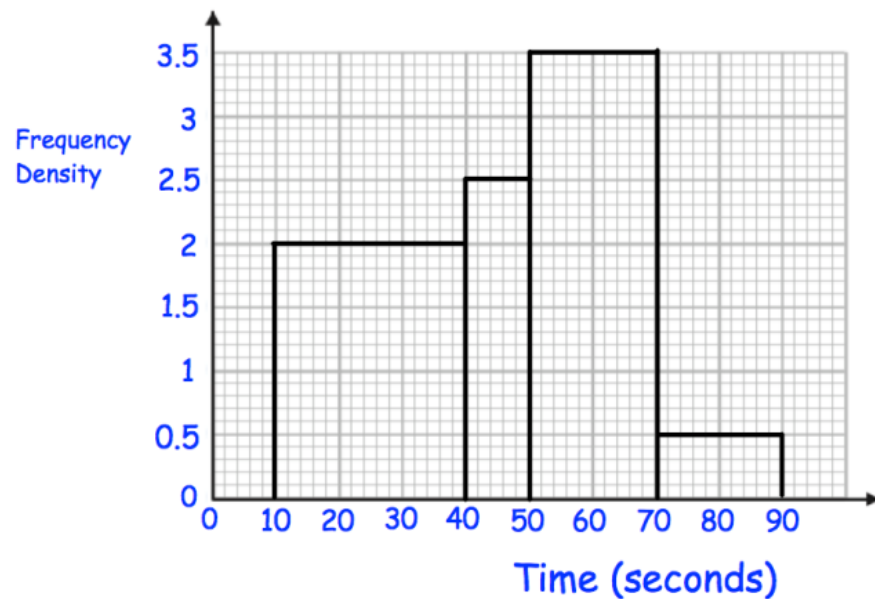
Worked example

Estimate the number of pilots who have flown under 350 hours.



Your turn

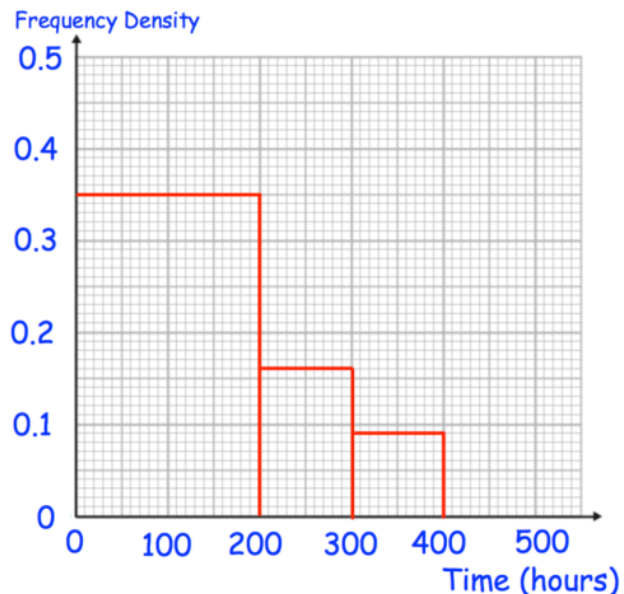
Estimate the number of students who took less than 60 seconds to complete the puzzle



120

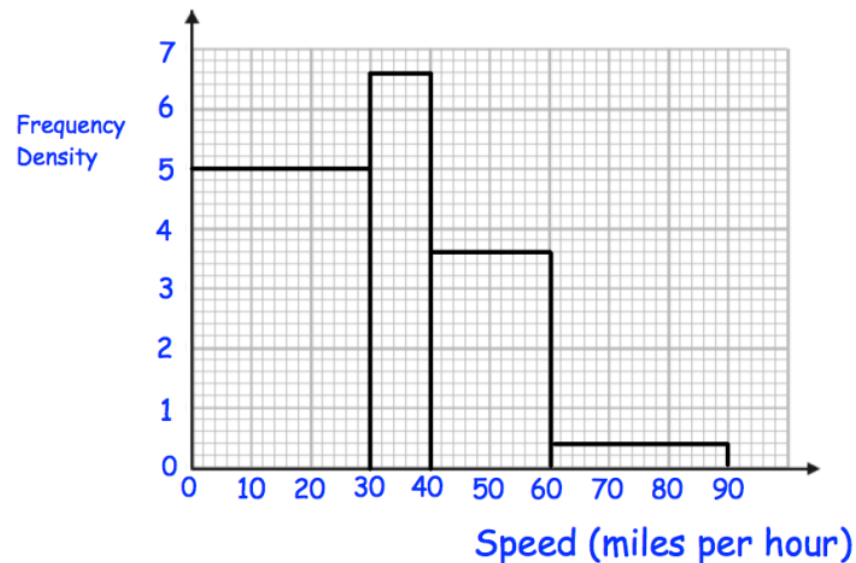
Worked example

Work out the percentage of pilots who have flown under 250 hours.



Your turn

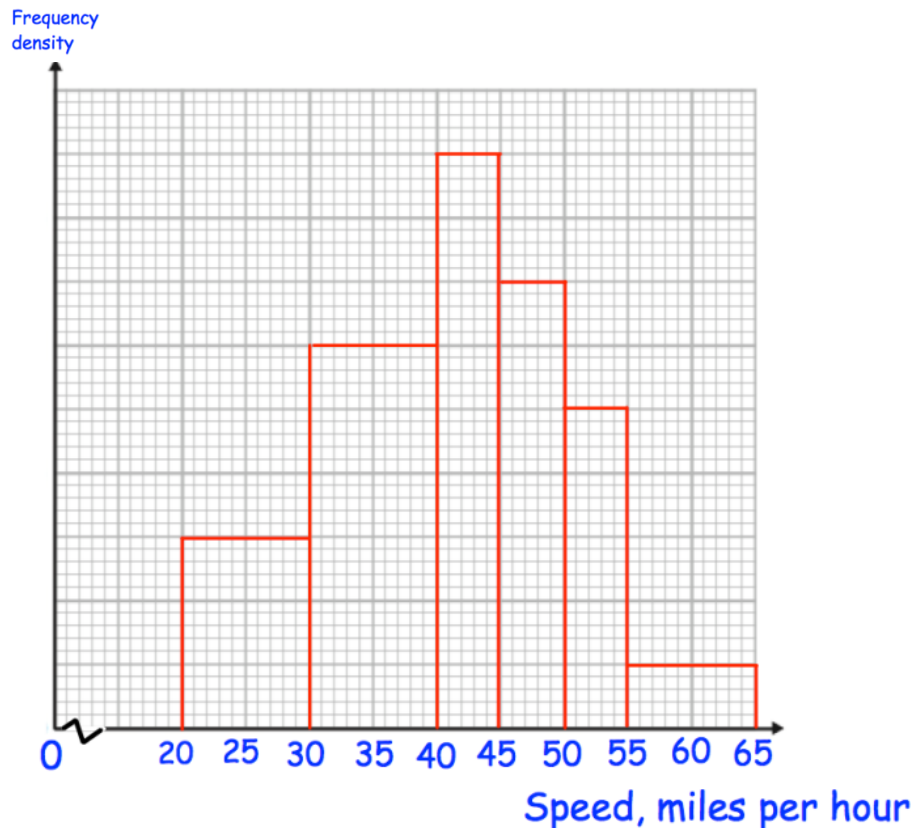
Work out the percentage of cars that were under the speed limit of 60 *mph*



96%

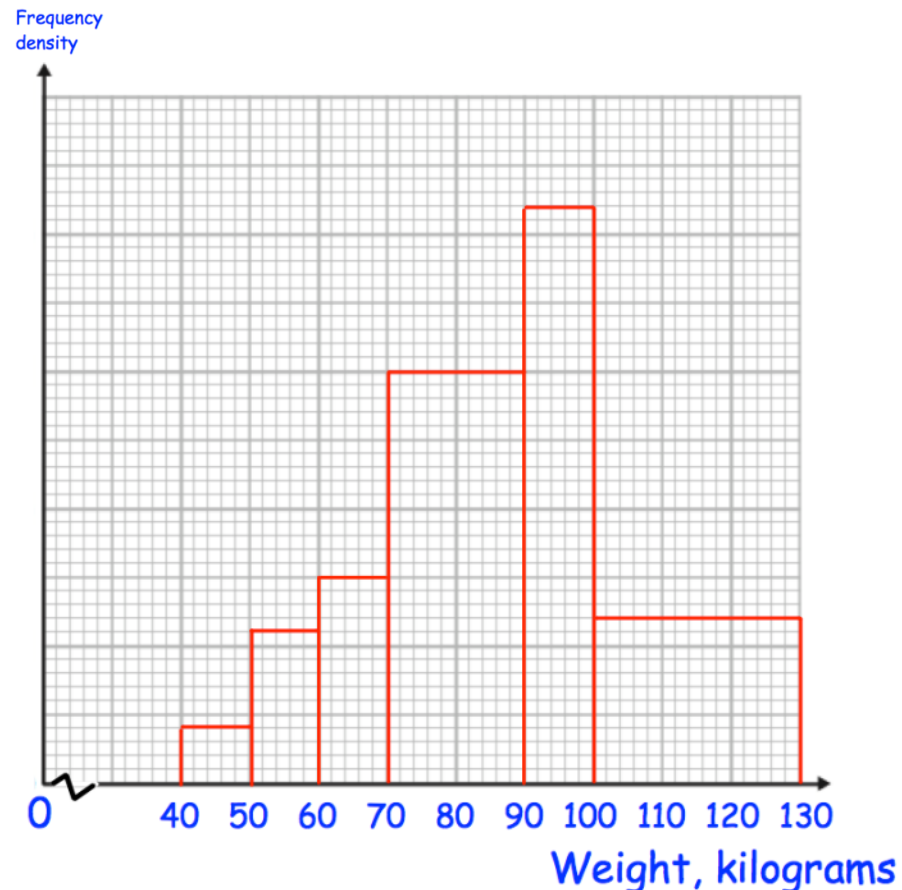
Worked example

There were 82 cars on the road.
14 cars were travelling over 50 *mph*.
Estimate the number of cars that
were travelling between 40 and 49
mph.



Your turn

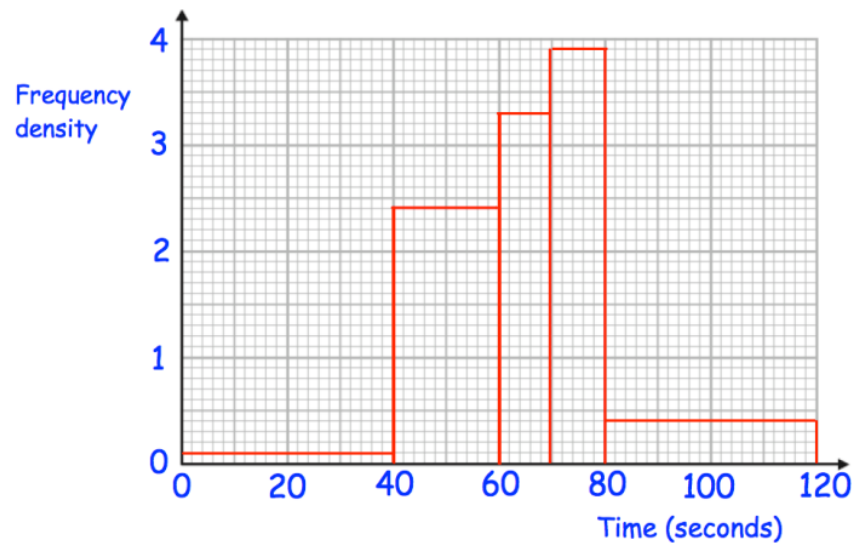
There were 504 athletes measured.
45 athletes weigh under 60 *kg*.
Estimate the number of athletes
between 70 and 95 *kg*.



243

Worked example

Estimate the median time



Your turn

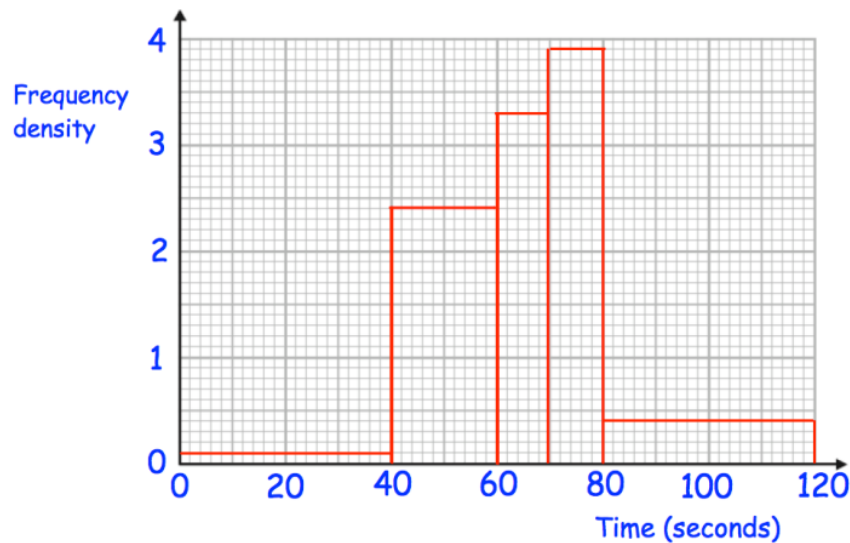
Estimate the median weight



14.84 (2 dp)

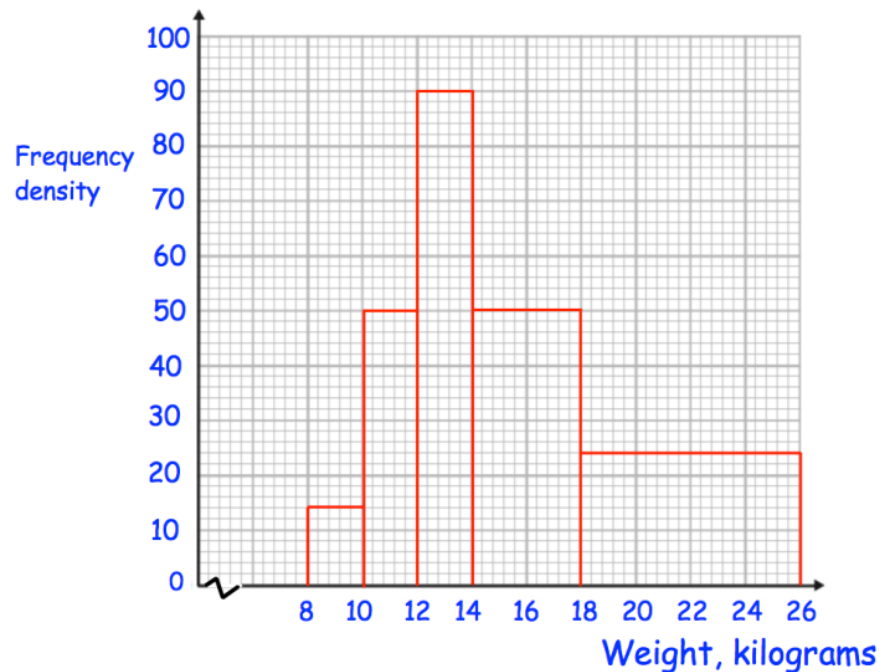
Worked example

A participant is chosen at random.
What is the probability they took longer than 60 seconds?



Your turn

A participant is chosen at random.
What is the probability they weight more than 14 *kg*



$$\frac{14}{25} = 0.56$$