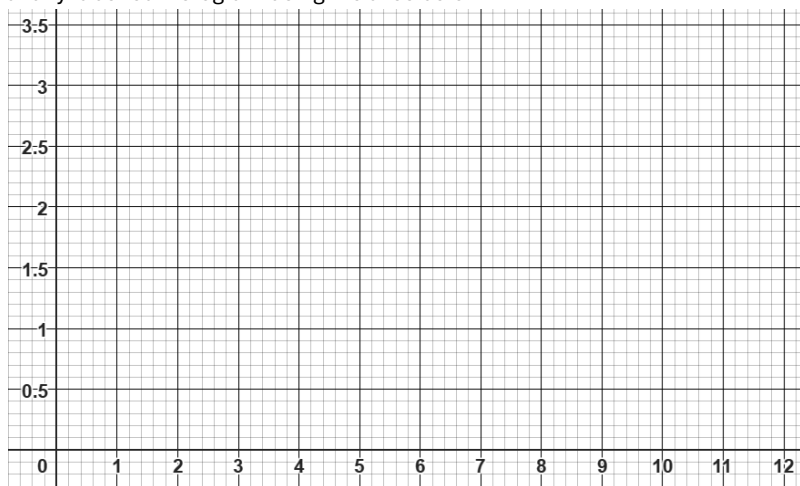


Histograms – www.m4ths.com – Steve Blades ©

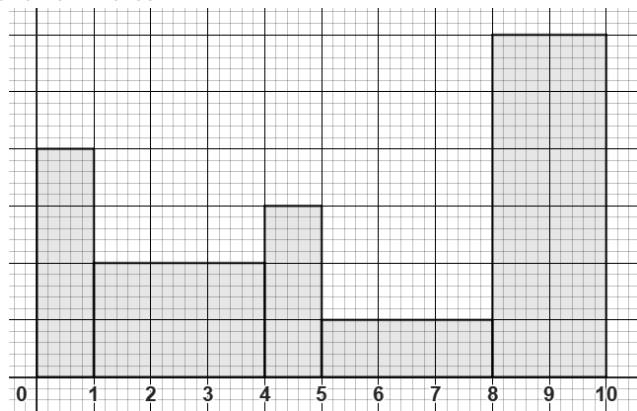
(1) Jamal wants to draw a histogram using the table below

Height of Crop (H_{cm})	Frequency	Frequency Density
$0 < H \leq 4$	8	2
$4 < H \leq 6$	1	1
$6 < H \leq 10$	4	1
$10 < H \leq 11$	x	3
$11 < H \leq 12$	1	y

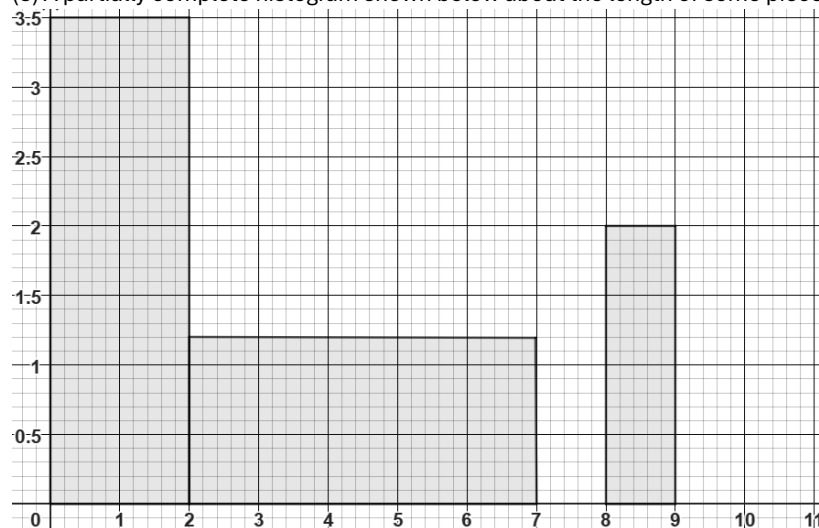
- (a) Which of the first 3 Frequency Density values is wrong?
 (b) Find the correct frequency density for the answer in part (a).
 (c) Find the values of x and y .
 (d) Draw a fully labelled histogram using the axes below.



(2) A histogram is shown below showing the time taken (in minutes) for geeks to complete level 38 of a computer game. Given that 40 geeks took no longer than 4 minutes, find the number that took between 5 and 10 minutes



(3) A partially complete histogram shown below about the length of some pieces of wood in cm

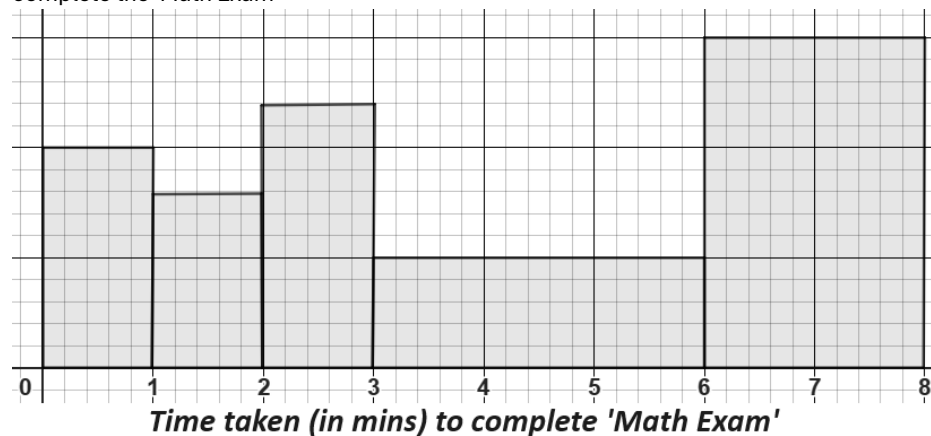


- (a) Add the correct label to each axis.
 (b) Using the histogram, find the value of x and y in the table below

Length of Bar (L_{cm})	Frequency
$0 < L \leq 2$	7
$2 < L \leq 7$	x
$7 < L \leq 8$	3
$8 < L \leq 9$	y
$9 < L \leq 11$	3

(c) Use the table above to complete the histogram.

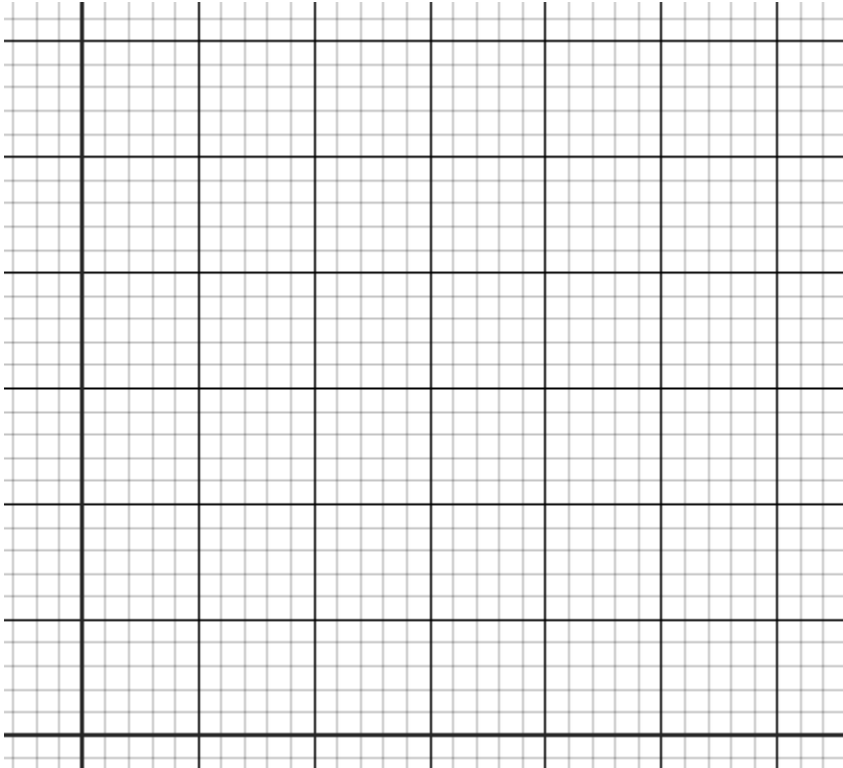
(4) Use the histogram to estimate the proportion of people that took more than 5 minutes to complete the 'Math Exam'



(5) The number of hours of sunshine in Town A each day was recorded for the month of June 2078. The information is shown below in the table.

Hours of Sunshine in Wisbech (H_{cm})	Frequency
$0 < L \leq 1$	5
$1 < L \leq 3$	9
$3 < L \leq 4$	6
$4 < L \leq 6$	10

Draw a fully labelled histogram using the grid below

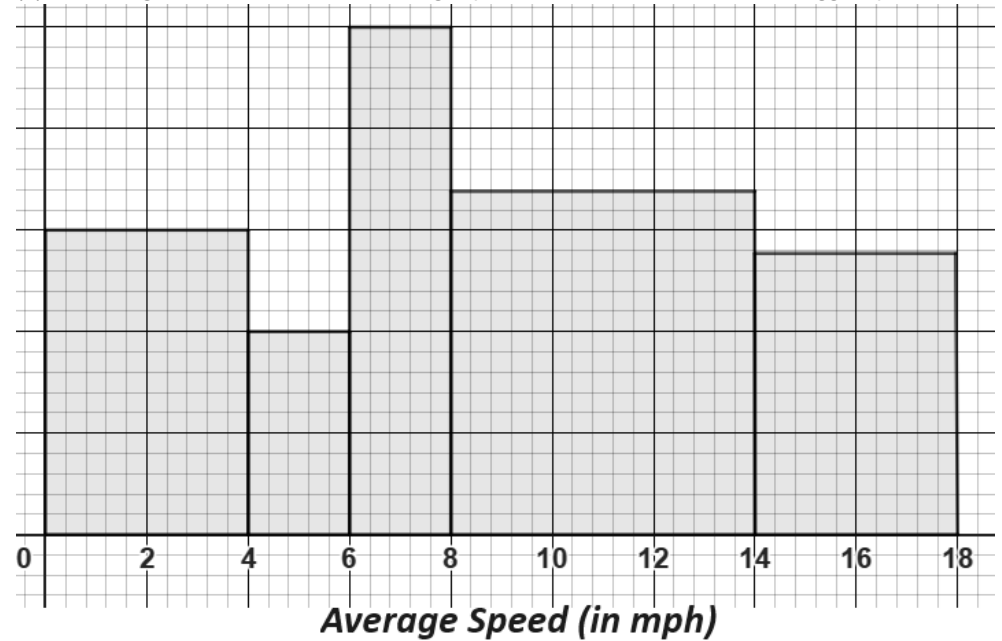


(6) A study was conducted on the % some liquid that was 'good for you' in a number of drinks . A table is shown below with some of the information ready for a histogram.

% of Goodness (P)	Frequency	Frequency Density
$0 < P \leq 20$	6	0.3
$20 < P \leq a$	8	0.8
$b < P \leq 50$	c	2
$50 < P \leq 80$	18	d
$80 < P \leq 100$	e	5

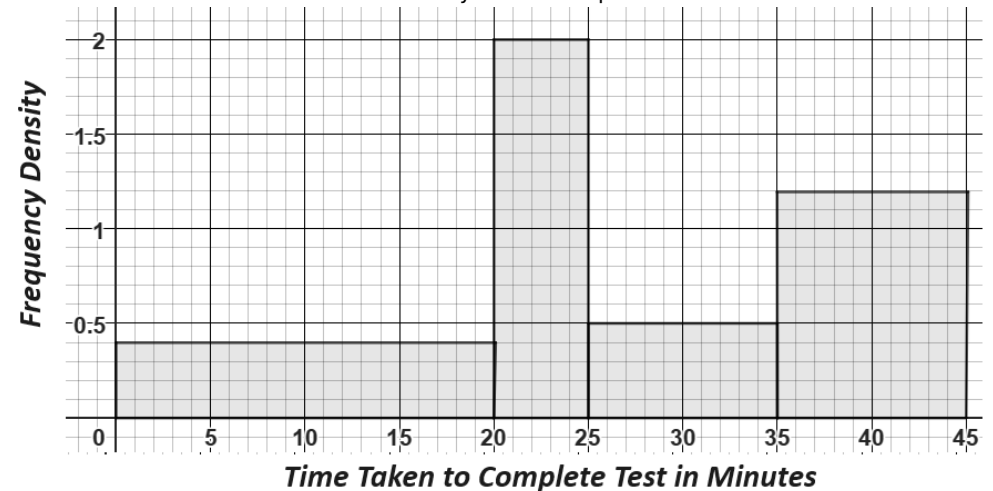
- (a) Find the values of a, b, c, d and e .
 (b) A drink is taken at random, find the probability that it has less than 50% goodness.
 (c) Estimate the proportion of drinks that contained between 90 and 100% goodness.

(7) The histogram below shows the average speed of the runners in the world egg & spoon race.



Given that 300 egg and spooners had an average speed between 2 and 4 mph, estimate the number who had a speed between 7mph and 14mph.

(8) Some people were asked to complete a test to get onto a special program. The histogram below shows information about the time they took to complete the test.



People taking less than 15 minutes got onto the program. People taking between 15 and 40 minutes were put on a reserve list. Estimate the number of people on the reserve list.