



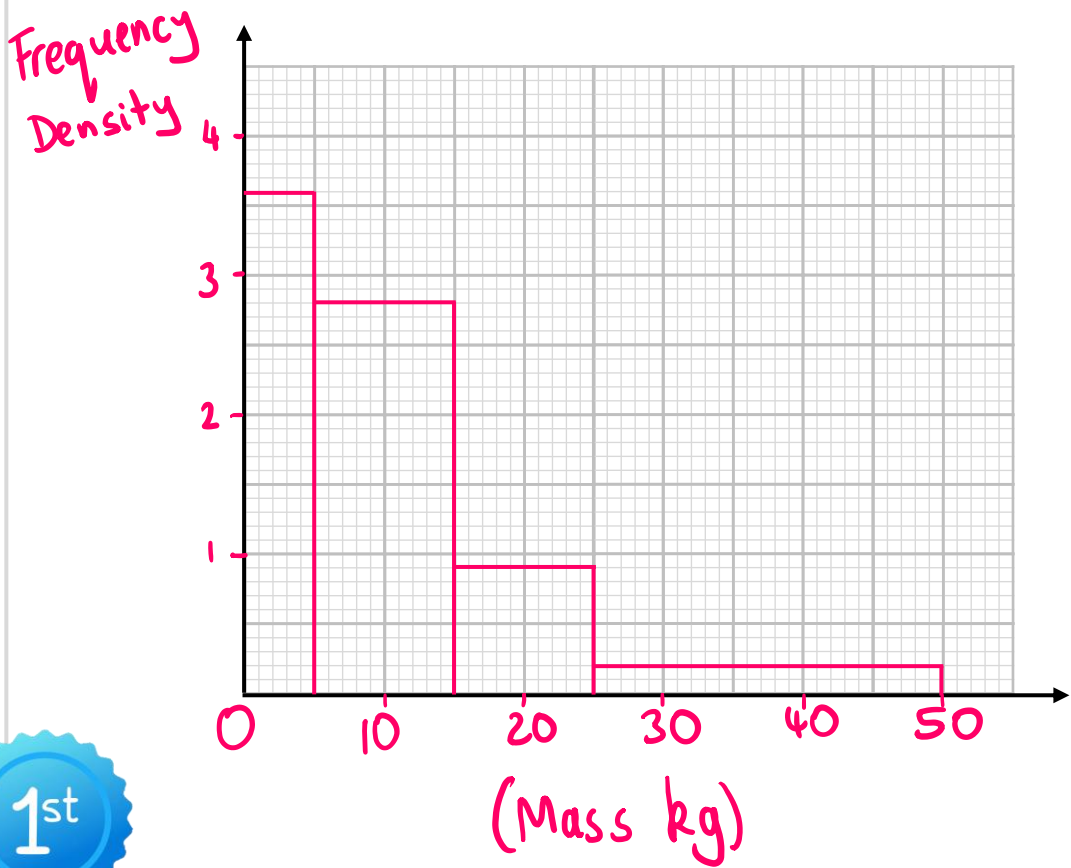
Drawing Histograms

← REVISE THIS TOPIC

1 Here is some information about the masses, in kg, of 60 dogs.

Mass, m (kg)	Frequency	Frequency Density
$0 < m \leq 5$	18	$18 \div 5 = 3.6$
$5 < m \leq 15$	28	$28 \div 10 = 2.8$
$15 < m \leq 25$	9	$9 \div 10 = 0.9$
$25 < m \leq 50$	5	$5 \div 25 = 0.2$

Draw a histogram to represent the information. [3 marks]



2 Here is some information about the speeds, in mph, of 50 vehicles.

Speed, S (mph)	Frequency
$30 < S \leq 40$	8
$40 < S \leq 45$	27
$45 < S \leq 50$	13
$50 < S \leq 70$	2

Frequency Density

$$8 \div 10 = 0.8$$

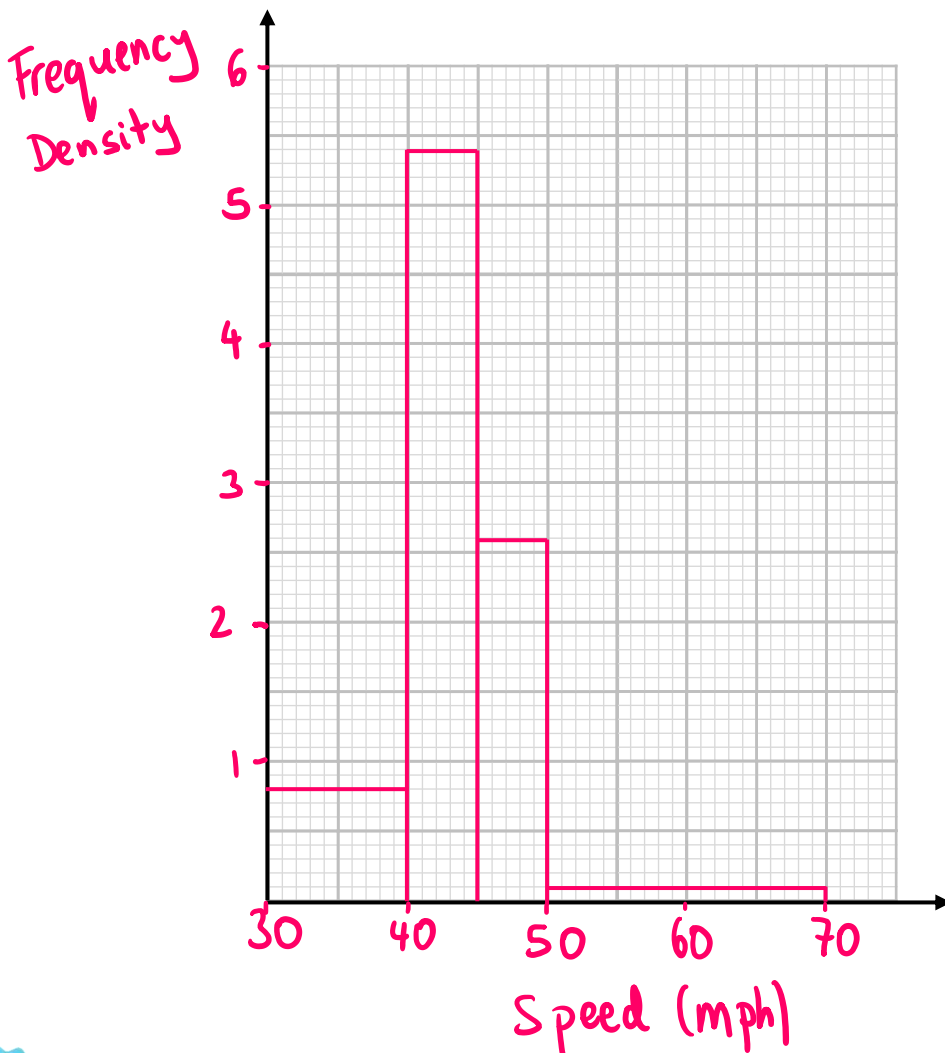
$$27 \div 5 = 5.4$$

$$13 \div 5 = 2.6$$

$$2 \div 20 = 0.1$$

Draw a histogram to represent the information.

[3 marks]



3 Here is some information about the ages of 100 people taking their driving test.

Age (A years)	Frequency
$17 < A \leq 20$	42
$20 < A \leq 25$	30
$25 < A \leq 30$	16
$30 < A \leq 40$	6
$40 < A \leq 70$	6

Frequency Density

$$42 \div 3 = 14$$

$$30 \div 5 = 6$$

$$16 \div 5 = 3.2$$

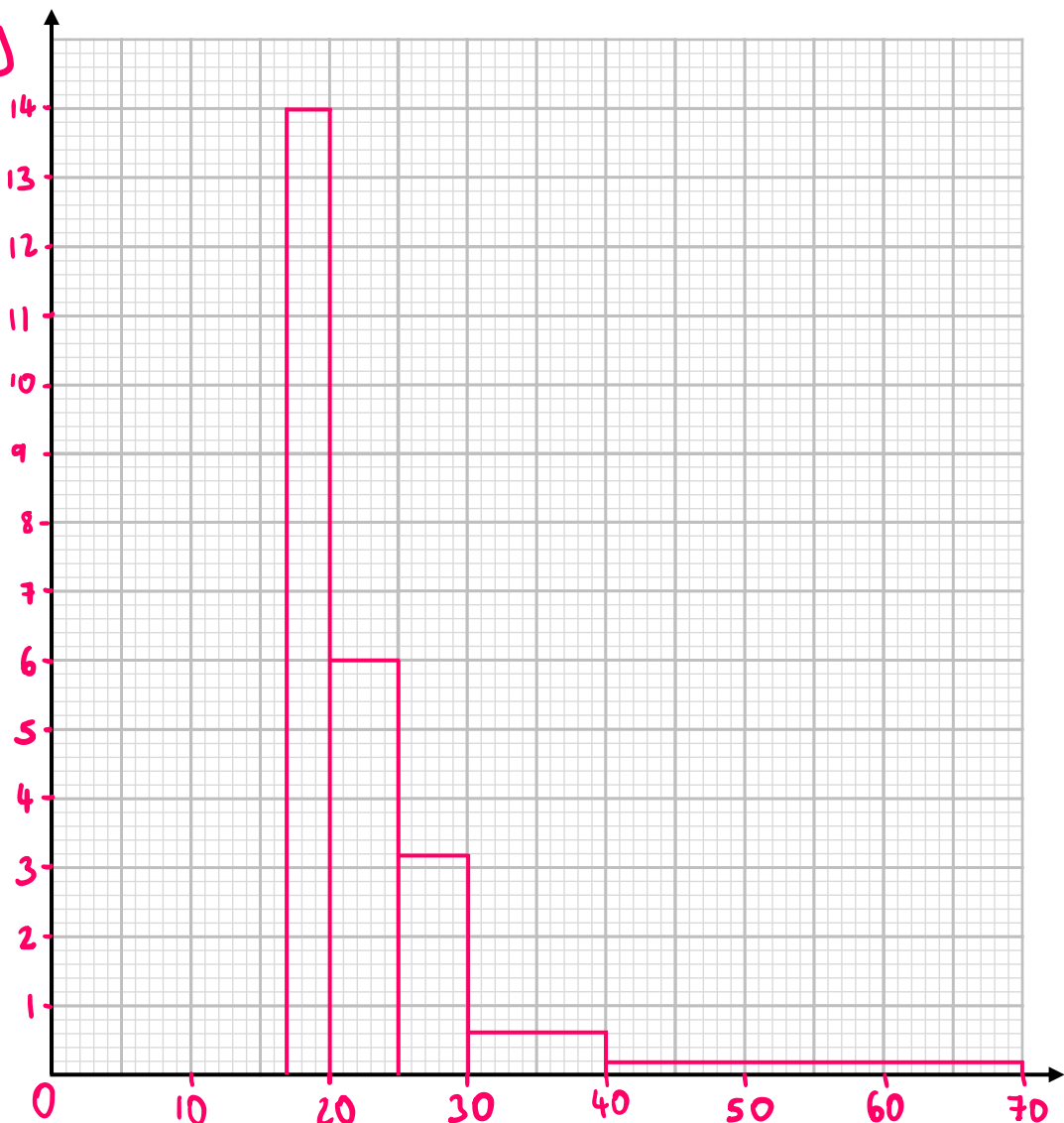
$$6 \div 10 = 0.6$$

$$6 \div 30 = 0.2$$

Draw a histogram to represent the information.

[3 marks]

Frequency
Density



Age (years)

6

Turn over ►



4 Here is some information about the times, in minutes, of 100 runners for a race.

Time, t (minutes)	Frequency
$15 < t \leq 20$	12
$20 < t \leq 23$	27
$23 < t \leq 27$	32
$27 < t \leq 35$	20
$35 < t \leq 45$	9

Frequency Density

$$12 \div 5 = 2.4$$

$$27 \div 3 = 9$$

$$32 \div 4 = 8$$

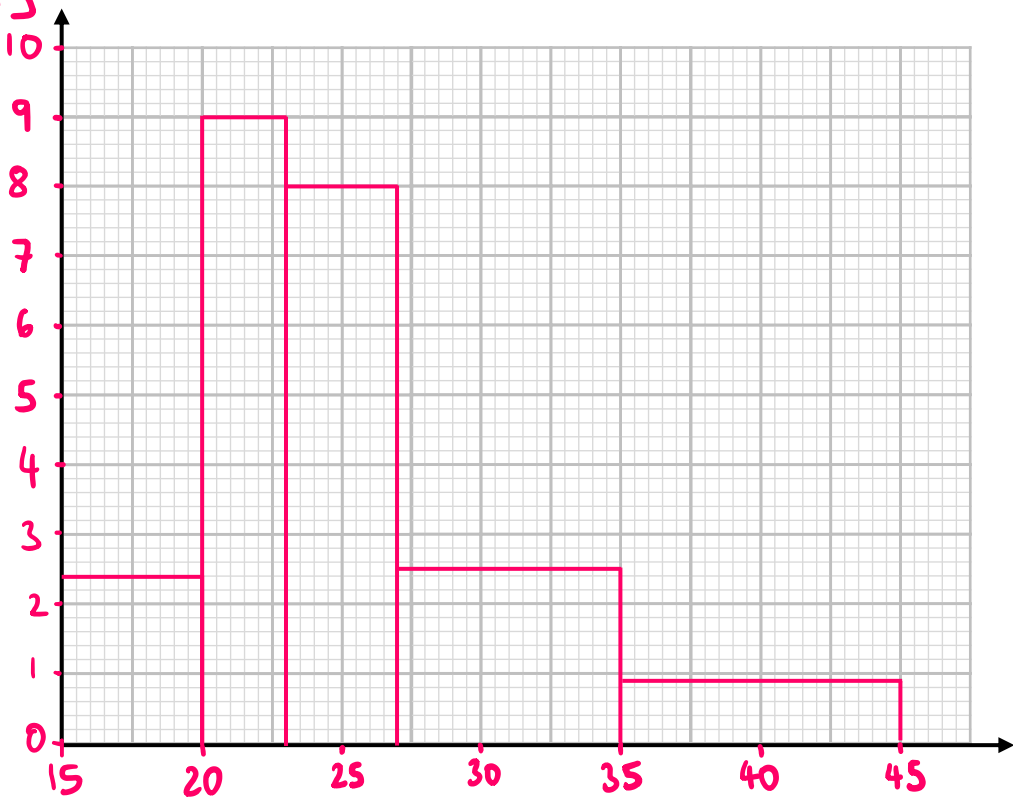
$$20 \div 8 = 2.5$$

$$9 \div 10 = 0.9$$

Draw a histogram to represent the information.

[3 marks]

Frequency
Density



Time (mins)



5 Here is some information about the distance, in metres, of 40 long jumps.

Distance, d (metres)	Frequency
$6 < d \leq 7$	2
$7 < d \leq 7.5$	2
$7.5 < d \leq 8$	6
$8 < d \leq 8.2$	18
$8.2 < d \leq 8.5$	12

Frequency Density

$$2 \div 1 = 2$$

$$2 \div 0.5 = 4$$

$$6 \div 0.5 = 12$$

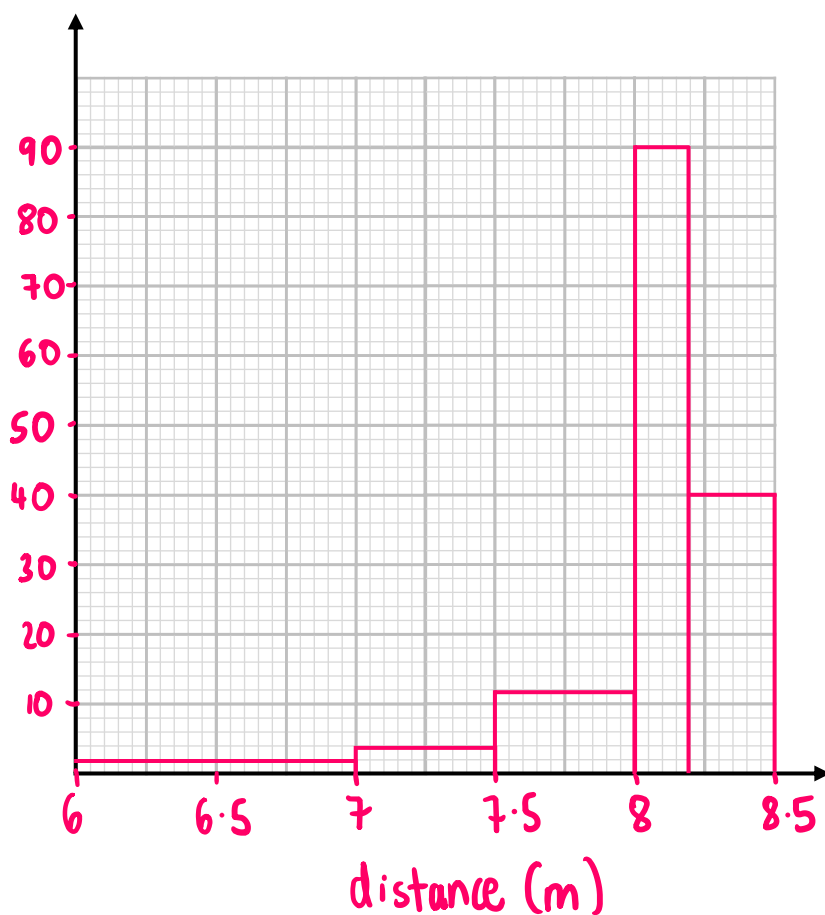
$$18 \div 0.2 = 90$$

$$12 \div 0.3 = 40$$

Draw a histogram to represent the information.

[3 marks]

Frequency
Density



6 Here is some information about the heights, in metres, of 70 trees in a park.

Height, h (metres)	Frequency
$0 < h \leq 10$	16
$10 < h \leq 15$	28
$15 < h \leq 25$	14
$25 < h \leq 40$	12

Frequency Density

$$16 \div 10 = 1.6$$

$$28 \div 5 = 5.6$$

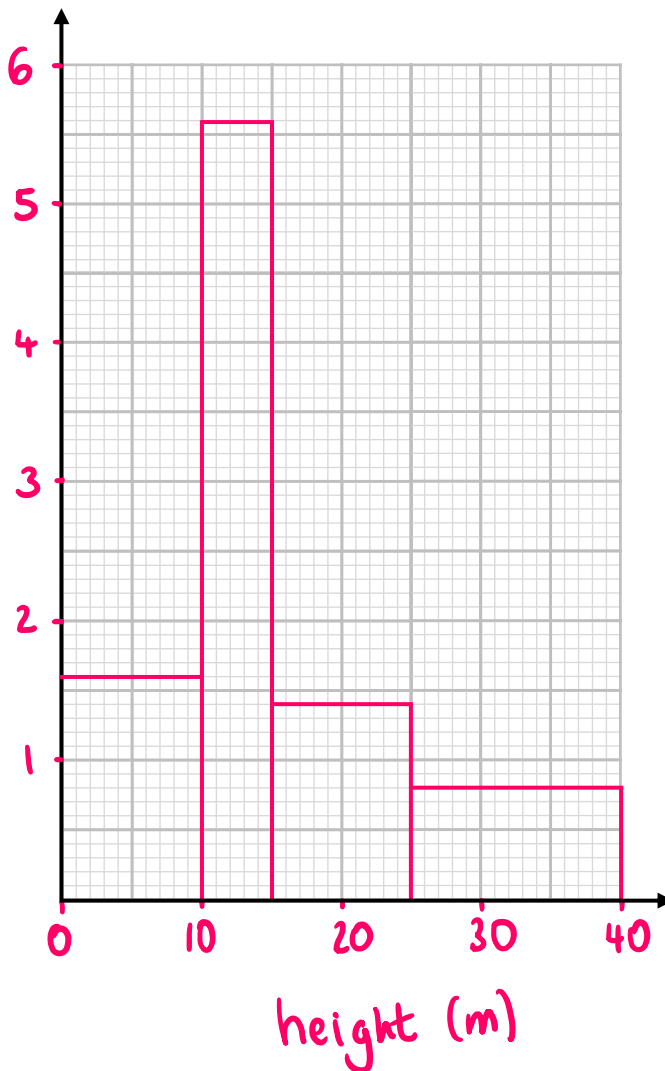
$$14 \div 10 = 1.4$$

$$12 \div 15 = 0.8$$

Draw a histogram to represent the information.

[3 marks]

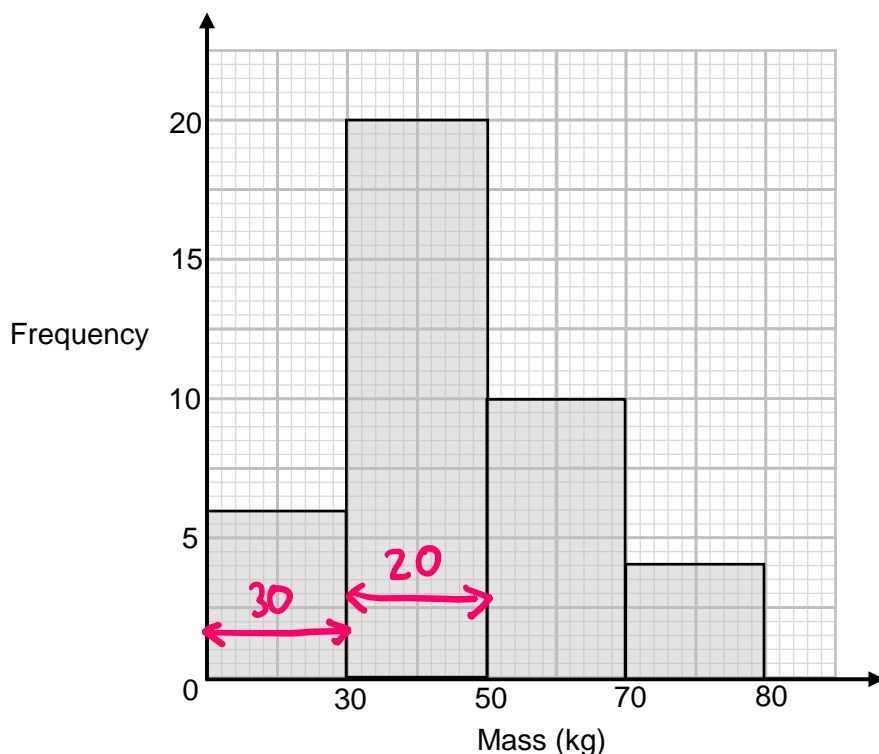
Frequency
Density



7 Here is some information about the masses, in kg, of 40 sheep.

Mass (m kg)	Frequency
$0 < m \leq 30$	6
$30 < m \leq 50$	20
$50 < m \leq 70$	10
$70 < m \leq 80$	4

Shaun drew a histogram for the information in the table.



Write down two mistakes that Shaun has made

[2 marks]

Mistake 1 Shaun has plotted frequency rather than frequency density

Mistake 2 The scale for mass is not consistent. In the first bar 2 squares = 30 but the next bar 2 squares = 20

5

