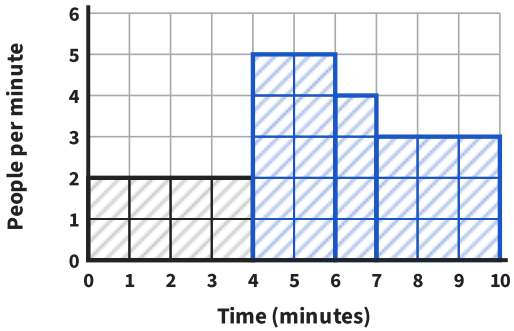
Histograms: Drawing Histograms

ANSWERS

1

Each square is one person. Draw each bar from squares, then write how tall it is.

Time (minutes)	Frequency	Height of bar
$0 < t \leq 4$	8	2
$4 < t \leq 6$	10	5
$6 < t \leq 7$	4	4
$7 < t \leq 10$	9	3

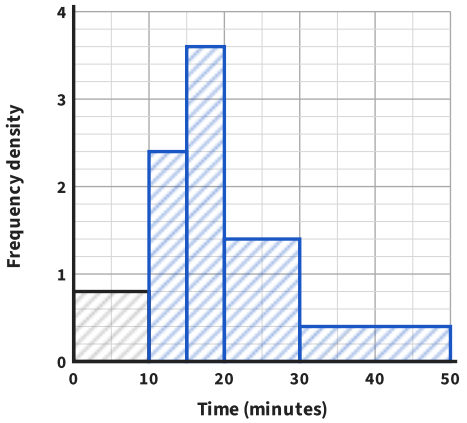


2

frequency density = frequency ÷ class width

Complete the table, then draw the histogram.

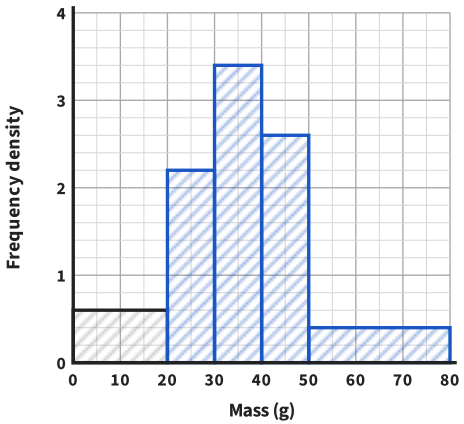
Time (minutes)	Frequency	Class width	Frequency density
$0 < t \leq 10$	8	10	0.8
$10 < t \leq 15$	12	5	2.4
$15 < t \leq 20$	18	5	3.6
$20 < t \leq 30$	14	10	1.4
$30 < t \leq 50$	8	20	0.4



3

Complete the table, then draw the histogram.

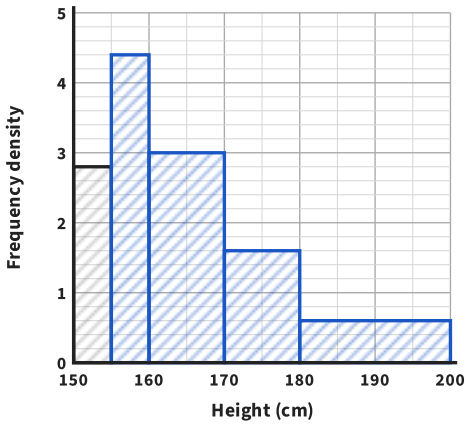
Mass (g)	Frequency	Class width	Frequency density
$0 < m \leq 20$	12	20	0.6
$20 < m \leq 30$	22	10	2.2
$30 < m \leq 40$	34	10	3.4
$40 < m \leq 50$	26	10	2.6
$50 < m \leq 80$	12	30	0.4



4

Complete the table, then draw the histogram.

Height (cm)	Frequency	Class width	Frequency density
$150 < h \leq 155$	14	5	2.8
$155 < h \leq 160$	22	5	4.4
$160 < h \leq 170$	30	10	3
$170 < h \leq 180$	16	10	1.6
$180 < h \leq 200$	12	20	0.6



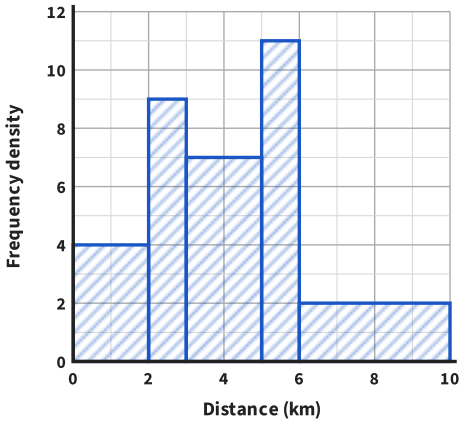
Histograms: Drawing Histograms

ANSWERS

5

Complete the table, then draw the histogram.

Distance (km)	Frequency	Class width	Frequency density
$0 < d \leq 2$	8	2	4
$2 < d \leq 3$	9	1	9
$3 < d \leq 5$	14	2	7
$5 < d \leq 6$	11	1	11
$6 < d \leq 10$	8	4	2



6

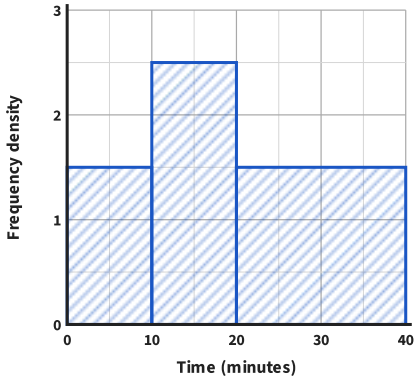
Explain what Sam has done wrong. Then draw the histogram properly.

Time (minutes)	Frequency
$0 < t \leq 10$	15
$10 < t \leq 20$	25
$20 < t \leq 40$	30

Sam drew a bar 20 wide and 30 tall for the last class.

Sam drew the frequencies as the heights

Height = 30 ÷ 20 = 1.5



7

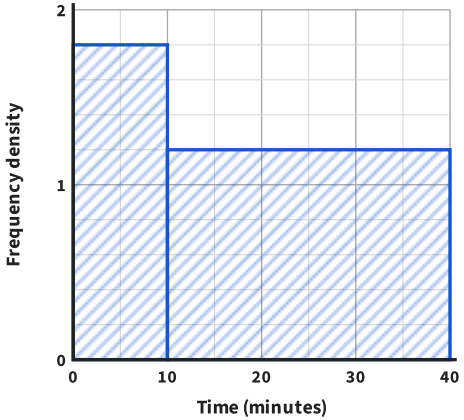
Which class has the taller bar? Work it out, then draw both bars.

Time (minutes)	Frequency
$0 < t \leq 10$	18
$10 < t \leq 40$	36

18 ÷ 10 = 1.8

36 ÷ 30 = 1.2

Taller 0 < t ≤ 10 (1.8)

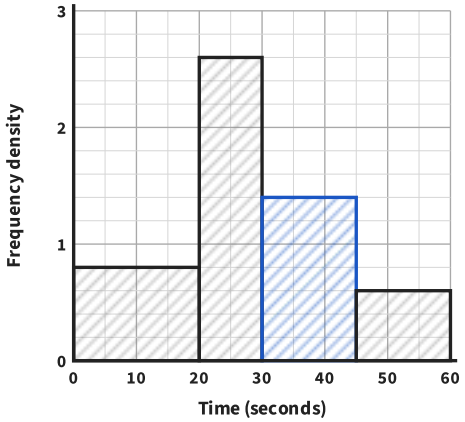


8

Three of the bars are drawn. Draw the bar for $30 < t \leq 45$.

Time (seconds)	Frequency
$0 < t \leq 20$	16
$20 < t \leq 30$	26
$30 < t \leq 45$	21
$45 < t \leq 60$	9

21 ÷ 15 = 1.4

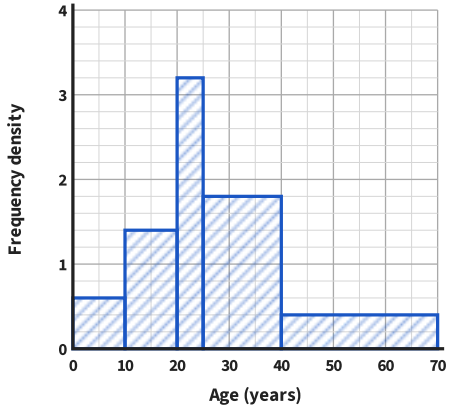


Histograms: Drawing Histograms *further practice*

ANSWERS

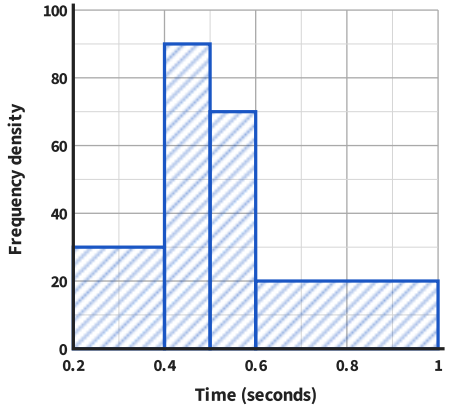
9 Draw a histogram for the data in the table.

Age (years)	Frequency		
$0 < a \leq 10$	6	10	0.6
$10 < a \leq 20$	14	10	1.4
$20 < a \leq 25$	16	5	3.2
$25 < a \leq 40$	27	15	1.8
$40 < a \leq 70$	12	30	0.4



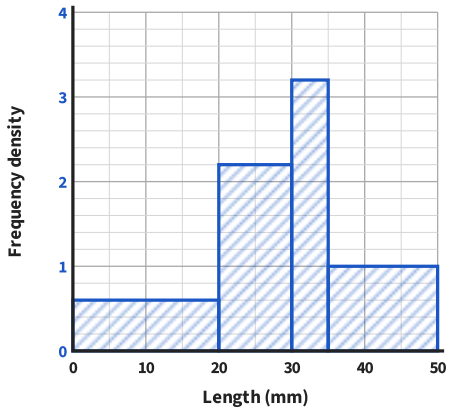
10 The table shows reaction times. Draw a histogram.

Time (seconds)	Frequency		
$0.2 < t \leq 0.4$	6	0.2	30
$0.4 < t \leq 0.5$	9	0.1	90
$0.5 < t \leq 0.6$	7	0.1	70
$0.6 < t \leq 1$	8	0.4	20



11 Choose a scale for the frequency density axis, then draw the histogram.

Length (mm)	Frequency		
$0 \leq l < 20$	12	20	0.6
$20 \leq l < 30$	22	10	2.2
$30 \leq l < 35$	16	5	3.2
$35 \leq l < 50$	15	15	1



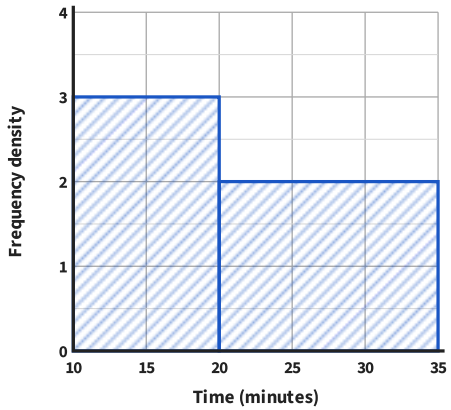
12 Which bar on the histogram is taller, and by how much? Draw both bars.

Thirty runners took between 10 and 20 minutes. Thirty more took between 20 and 35 minutes.

$30 \div 10 = 3$

$30 \div 15 = 2$

Answer 10 to 20, by 1



Histograms: Drawing Histograms *further practice*

ANSWERS

13

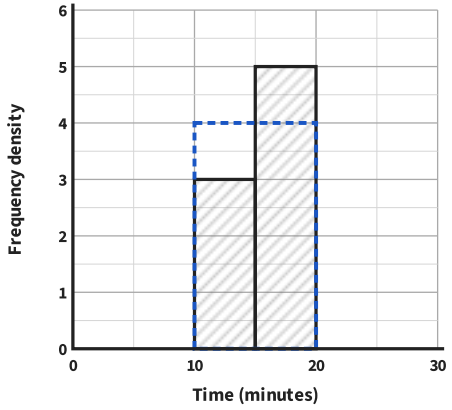
How tall is the new bar? Draw it.

The two bars show 15 and 25 people.
They are joined into one class, $10 < t \leq 20$.

15 + 25 = 40

40 ÷ 10 = 4

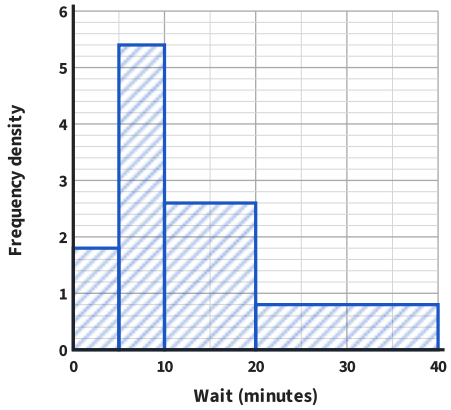
Height 4



14

78 people were asked how long they waited. Find the missing frequency, then draw the histogram.

Wait (minutes)	Frequency	Frequency density
$0 < t \leq 5$	9	1.8
$5 < t \leq 10$	27	5.4
$10 < t \leq 20$	26	2.6
$20 < t \leq 40$	16	0.8



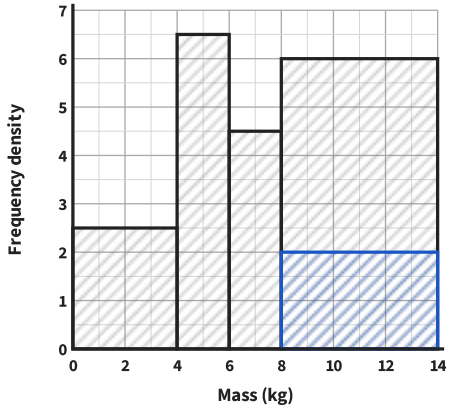
15

One bar is drawn wrong. Which one? Draw it properly.

Mass (kg)	Frequency
$0 < m \leq 4$	10
$4 < m \leq 6$	13
$6 < m \leq 8$	9
$8 < m \leq 14$	12

Wrong bar $8 < m \leq 14$

12 ÷ 6 = 2, not 6



16

Explain why Kim is wrong.

Kim says the class $10 < t \leq 15$ has the most people, because it has the tallest bar.

10 to 15: 3.4 × 5 = 17 people

15 to 30: 2.2 × 15 = 33 people

The area is the frequency, not the height

