

Question 2

(a) 70, 58, 60, 44, 16

(b) $2x/5$
 $y/2$

Notes:

(a) B4 for all correct

B3 for 4 correct

B2 for 3 correct

B1 cao for 2 correct

(b) M1 use of 20 min as std interval

A1 cao for $y/2$

A1 cao for $2x/5$

Question 3

(a) 3rd interval: 120 plants need 12 cm² so 10 plants per cm². 4th interval: Area 11.5cm² so $11.5 \times 10 = 115$ plants. 5th interval: Area 10.5 cm² so 105 plants. 2nd interval: 30 plants need 3 cm² so height = $3 \div 3 = 1$ cm. 6th interval: 96 plants need 9.6 cm² so height = $9.6 \div 2 = 4.8$ cm.

OR

f.d. for 3rd interval = $120 \div 10 = 12$, so scale on f.d. axis is $1 \text{ cm} = 12 \div 6 = 2$.

4th interval: $2 \times 11.5 \times 5 = 115$. 5th interval: $2 \times 10.5 \times 5 = 105$. 2nd interval:

f.d. = $30 \div 15 = 2$ ($2 \div 2 = 1$ cm). 6th interval: f.d. = $96 \div 10 = 9.6$ ($9.6 \div 2$ is 4.8 cm).

(b) $500 - (30 + 120 + 115 + 105 + 96) = 500 - 466 = 34$

Question 4

(a) 2nd interval $28 \div 14 = 2$ birds per cm². $10 \times 2 = 20$, $15.5 \times 2 = 31$,
 $113 - (20 + 28 + 31 + 12) = 22$

or

f.d. for 2nd interval = $28 \div 10 = 2.8$, so scale on f.d. axis is $1 \text{ cm} = 2.8 \div 7 = 0.4$

$0.4 \times 5 \times 10 = 20$, $0.4 \times 15.5 \times 5 = 31$ $113 - (20 + 28 + 31 + 12) = 22$

(b) 4th interval, $22 \div 2 = 11 \text{ cm}^2$. 5th interval, $12 \div 2 = 6 \text{ cm}^2$, $6 \div 4 = 1.5 \text{ cm}$

or

f.d. = $22 \div 5 = 4.4$, ($4.4 \div 0.4 = 11 \text{ cm}$) f.d. = $12 \div 20 = 0.6$, ($0.6 \div 0.4 = 1.5 \text{ cm}$)

Question 5

(a) e.g. $16 \div 5 = 3.2$; $64 \div 3.2 = 20$ so $76 \div 20 \times 5 = 19$ etc. Frequencies are:
7, 6, 9, 36

(b) $27 \div 15 \times 20 = 36$

Question 6

(a) $21 \div 3 \times 4 = 28$

$51 \div 3 \times 2 = 34$

$63 \div 3 \times 2 = 42$

$57 \div 3 \times 2 = 38$

$24 \div 3 \times 4 = 32$

(b) $10 \times 3 \div 10 = 3$

Notes:

(a) B4 all correct, B3 – 4 correct, B2 – 3 correct, B1 – 2 correct, If B0 then M1 if fd's have been attempted (b)B2 – correct If B0 then M1 if fd has been used

Question 7

- (a) Missing values in order vertically down the table, ie 15; 8; 5
- (b) $2000 < P \leq 3000$ bar has base 10 sqs and ht 12.5 sqs
 $4000 < P \leq 6000$ bar has base 20 sqs and ht 5 sqs

Notes:

- (a) B1; B1; B1 cao
- (b) B3 if both bars correct (B1 if only one bar correct) ($12 < x < 13$)

Question 8

- (a) 35, 18, 22, 12
- (b) 40, 12

Question 9

- (a) 36, 29, 30
- (b) Correct histogram
- (c) 6

Question 10

0, 16, 18, 15, 13, 5, 0