

Chapter 4 Answers

Exercise 4A

1

	Key: 2 3 means 23 DVDs.	
0	6 9	(2)
1	2 2 2 5 5 5 7 8 9	(9)
2	0 2 3 5 5 5 6 6 7 7 9 9	(12)
3	2 2 4 4 5	(5)
4	2 5	(2)

a 25

b 15

c 29

2 a 24

b 49

c 8

d 3

e 37

f 34

g 21

h 37

3 a 41

b 32

c 47

d 15

e 47

4 a

	Boys		Girls	
(2)	9 8	2	4 6 8	(3)
(3)	4 2 2	3	2 3 4 4 9	(5)
(5)	8 7 5 5 4	4	5 6 7	(3)
(5)	7 6 6 4 4	5	2 4	(2)
(1)	0	6		

Key: 2 | 3 | 4 means 32 boys and 34 girls.

b The girls gained lower marks than the boys.

5 a 17 males, 15 females

b £48

c Males earned more in general.

Exercise 4B

1 a 7 is an outlier.

b 88 is not an outlier.

c 105 is an outlier.

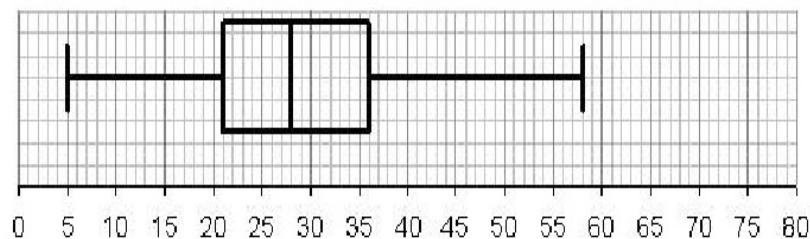
2 a no outliers

b 170 g and 440 g

c 760 g

Exercise 4C

1



2 a 47, 32

b 38

c 15

d 64

1 a 45

b lower quartile

c Boys have a lower median and a larger spread.
or Girls have a higher median and a smaller spread.

2 a The male turtles have a higher median weight, a greater interquartile range and a greater total range.

b It is more likely to have been female. Very few of the male turtles weighed this little, but more than a quarter of the female turtles weighed more than this.

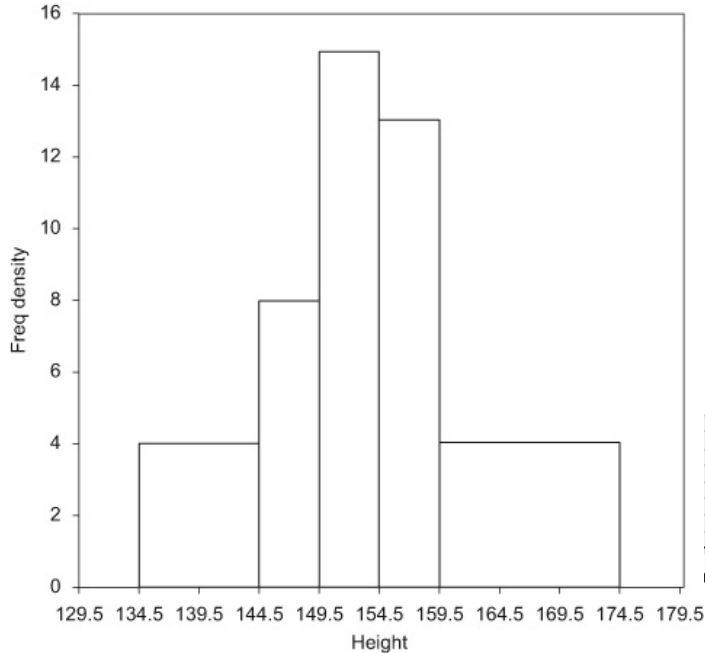
c 500 g

Exercise 4E

1 a

Height (cm)	Frequency	Class width	Frequency density
135–144	40	10	4
145–149	40	5	8
150–154	75	5	15
155–159	65	5	13
160–174	60	15	4

b



2 a The quantity (time) is continuous.

b 150

c 369

d 699

3 a 114

b 90

c 24

4 a The quantity (distance) is continuous.

b 620

c 150

d 190

e 130

5 a The quantity (weight) is continuous.

b The area of the bar is proportional to the frequency.

c 0.125

d 168

e 88

Exercise 4F

1 negative skew

2 a mean 31.1 minutes, variance 78.05

b median 29.7 minutes; quartiles 25.8 minutes, 34.8 minutes

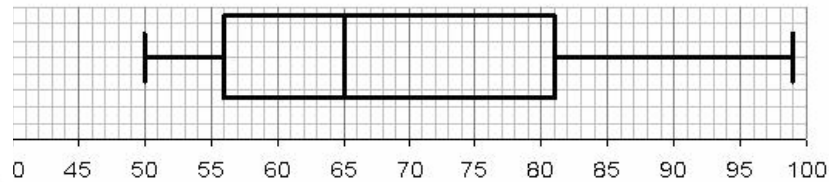
c 0.0853 (positive skew)

d They will use the median and quartiles because of the skew.

3 a 64 mm

b median 65 mm; quartiles 56 mm, 81 mm

c



d & f The mean is greater than the median, so the data is positively skewed.

e mean 68.7 mm, standard deviation 13.7 mm

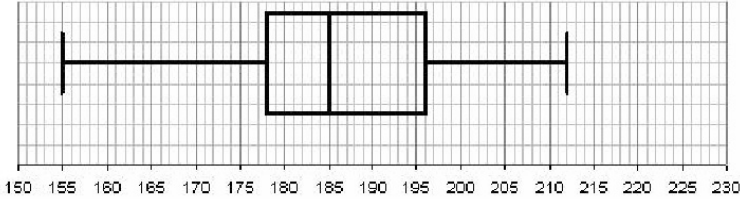
g various answers

Mixed exercise 4G

1 a $Q_1 = 178, Q_2 = 185, Q_3 = 196.$

b 226

c



d positive skew

2 a 22

b $X = 11, Y = 27, Z = 22.$

c Strand Road has more pedal cycles, since its median is higher.

3 a It is true. 60 is the median for shop B.

b It is true. 40 is the lower quartile for shop A.

c Shop A has a greater interquartile range and a greater total range than shop B. Shop B has a higher median.

d Shop B is more consistent.

4 a 45 minutes

b 60 minutes

c This represents an outlier.

d Irt has a higher median than Esk. The interquartile ranges were about the same.

e Esk positive skew, Irt symmetric

f Esk had the fastest runners.

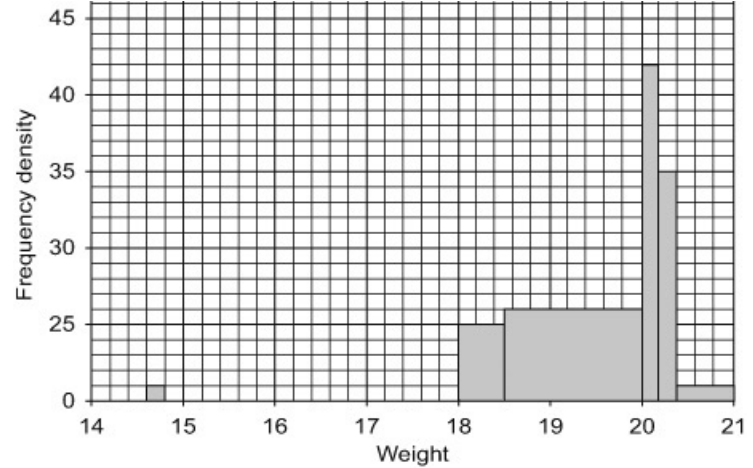
5 a 26

b 17

6 a 2.6 cm

b 0.28 cm

7 a



b mean 19.8 kg, s.d. 0.963 kg

c 20.1 kg

d -1.06

e negative skew

8 a 22.3

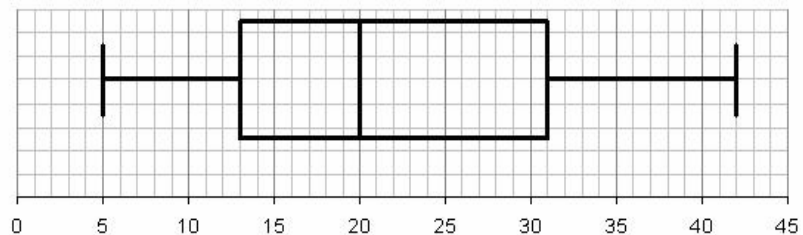
b

Key: 1 3 means 13 bags.		
0	5	(1)
1	0 1 3 5 7	(5)
2	0 0 5	(3)
3	0 1 3	(3)
4	0 2	(2)

c median 20; quartiles 13, 31

d no outliers

e



f positive skew