

1) (a)	Sight of correct midpoint 1, 3, 7, 15 or 25	B1	
	Use of at least one of their midpoints multiplied by the appropriate frequency	M1	Their midpoint must be between the upper and lower bounds for its class
	The f_x values summed and divided by 56	M1 dep	300 divided by 56 if correct
	5.4 or better	A1	5.357...
(b)	The data have been grouped/ we do not know (most of) the exact values	B1	oe (5)

2) Assumptions: Distance 1000km to 2000km **B1**
 Steps per day: 20,000 to 60,000 **B1**
 Average stride length 50cm to 1m **B1**
 OR
 Walking speed 3km/h to 6km/h **B1**
 Hours walked per day 8-10

Calculations: Distance walked per day (using steps per day):
 $20,000 \times 50 = 1,000,000\text{cm} = 10,000\text{m} = 10\text{km}$
 $60,000 \times 1 = 60,000\text{m} = 60\text{km}$

Distance walked per day (using walking speed):
 $3 \times 8 = 24\text{km}$
 $6 \times 10 = 60\text{km}$

Days needed:
 $1000 \div 60 = 17 \text{ days}$ **M1**
 $2000 \div 10 = 200 \text{ days}$

Answer: between 17 and 200 days **A1 (6)**

3) (a) $\frac{3660.5 - 2428}{2428} \times 100 = 50.7(619\dots)$ M1 A1 2

(b)(i) $\bar{d} = 3564.(33\dots)$ B1 Accept 3560

(ii) $s_x = 93.1(86\dots)$ B2 Accept 93.2 If use formula M1 A1 (5)

4) Dimensions of £1 coin: Max diameter 23.43mm, thickness: 2.80mm
 Rounded values: 25mm, 3mm **B1**
 Estimated volume: $\pi \times 12.5^2 \times 3 = 1473 \dots \text{mm}^3$ **M1**
 Total volume: $1473 \times 5000 = 7,365,000\text{mm}^3$
 $7,000,000\text{mm}^3 = 7 \text{ litres}$
 \therefore small enough volume to fit into a bag **A1**
OR
 Weight of £1 coin: 8.75g **B1**
 $8.75 \times 5000 = 43,750\text{g}$ **M1**
 Weight is about 44kg, this is probably too heavy to run away with **A1 (3)**

5) (a)	$\frac{215}{1200} \times 100$ or 17.9(...)	M1	
	18	A1	SC1 11.8(..) → 12 (women part-time) SC1 30.4(...) → 30 (men full time)
(b)	$\frac{365 + 105 + 83 + 162 + 53}{1200} (\times 100)$	M1	
	or		
	$\frac{768}{1200} (\times 100)$		
	or		
	$1 - \frac{142 + 75 + 215}{1200}$		
	64	A1	Allow 63 if proportions for each group calculated separately and rounded

(4)

6)	10×12 or 120 or $\frac{1}{2} \times 10 \times (18 - 12)$ or 30	M1	oe
	10×12 or 120 and $\frac{1}{2} \times 10 \times (18 - 12)$ or 30	M1	oe
	150	A1	

(3)

7) (a)	Completes key appropriately	B1	
	Correct ordered leaves 7 8 9 9 4 6 1 2 5 6 1 3 9 6 8	B2	B1 up to two errors or omissions Count unordered as one error

(b)	Evidence of selecting their middle value(s)	M1	8 th if from correct stem-and-leaf
	102	A1ft	Ft their values as long as ordered SC1 101.5 SC1 2

(c)	4th position identified (LQ) or 12 th position identified (UQ)	M1	ft for 15 ordered values
	89 or 113	A1	
	$113 - 89 (= 24)$	A1	Allow embedded 24

(d)	Higher average (on Sunday)	B1ft	oe
	Smaller interquartile range (on Sunday)	B1	oe

(10)

8)	$0.56 + 0.19 + 0.14 + 0.08$ or 0.97 or $1 - 0.56 - 0.19 - 0.14 - 0.08$ or $100 - 56 - 19 - 14 - 8$ or $100 - 97$	M1	
	0.03 or 3% or $\frac{3}{100}$	A1	

	1.28 or 128% or $\frac{128}{100}$	B1	
	$9\,400\,000 \div 1.28$	M1	pe $9\,400\,000 \div 128 \times 100$
	7 343 750 or 7 343 800 or 7 344 000 or 7 340 000	A1	Accept 7 300 000 with working SC2 13 055 555(...) or 13 055 556

(5)

9) a) Quantitative **B1** b) Qualitative **B1** c) Quantitative **B1**

(3)

TOTAL: 44