# Unit 2 Descriptive Statistics - Marks

**1a.** *[1 mark]*

## Markscheme

***(A1)(C1)***

**1b.** *[3 marks]*

## Markscheme

 ***(A1)*(ft)*(A1)(A1) (C3)***

**Notes:** Award ***(A1)*(ft)** for correct median, ***(A1)*** for correct quartiles and box, ***(A1)*** for endpoints 2 and 8 joined by a straight line that does not cross the box. Follow through from their median from part (a).

**1c.** *[2 marks]*

## Markscheme

 ***(M1)***

**Notes:** Award ***(M1)*** for **OR**.

 ***(A1) (C2)***

**2a.** *[3 marks]*

## Markscheme

(i)  ***(G2)***

**Notes:** Award ***(M1)*** for an attempt to use the formula for the mean with a least two rows from the table.

(ii)  ***(G1)***

**2b.** *[3 marks]*

## Markscheme

 ***(M1)(A1)***

**Notes:** Award ***(M1)*** for attempting to use the normal distribution to find the probability **or** for correct region indicated on labelled diagram. Award ***(A1)*** for correct probability.

 ***(A1)*(ft)*(G3)***

**Notes:** Award ***(A1)*(ft)** for converting their probability into a percentage.

**2c.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for attempting to use the normal distribution to find the probability **or** for correct region indicated on labelled diagram.

 ***(A1)(G2)***

**2d.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for subtracting “ their part (b)” from 100 **or *(M1)*** for attempting to use the normal distribution to find the probability  **or** for correct region indicated on labelled diagram.

 ***(A1)*(ft)*(G2)***

**Notes:**Follow through from their answer to part (b). Percentage symbol is not required. Accept () if used.

**2e.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for multiplying by  (or ).

 ***(A1)(G2)***

**3a.** *[1 mark]*

## Markscheme

discrete ***(A1) (C1)***

**3b.** *[2 marks]*

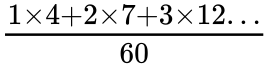
## Markscheme

(i) 60 ***(A1)***

(ii) 5 ***(A1) (C2)***

**3c.** *[3 marks]*

## Markscheme

(i)  ***(M1)***

**Notes:** Award ***(M1)*** for an attempt to substitute into the “mean of a set of data” formula, **with at least three correct terms** in the numerator.

Denominator must be 60.

Follow through from part (b)(i), only if work is seen.

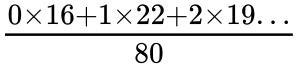
 ***(A1)***

**Notes:** Award at most ***(M1)(A0)*** for an answer of 4 but only if working seen.

(ii)  ***(A1) (C3)***

**4a.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for substituting correct values into mean formula.

1.75 ***(A1) (C2)***

***[2 marks]***

**4b.** *[2 marks]*

## Markscheme

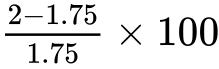
An attempt to enumerate the number of goals scored. ***(M1)***

 ***(A1) (C2)***

***[2 marks]***

**4c.** *[2 marks]*

## Markscheme

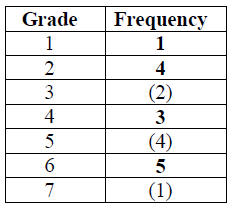
 ***(M1)***  
 ***(A1)*(ft) *(C2)***

**Notes:** Award ***(M1)*** for correctly substituted  error formula.  sign not required. Follow through from their answer to part (a). If  is missing and answer incorrect award ***(M0)(A0)***. If  is missing and answer incorrectly rounded award ***(M1)(A1)*(ft)*(AP)***.

***[2 marks]***

**5a.** *[2 marks]*

## Markscheme

 ***(A2) (C2)***

**Notes:** Award ***(A1)*** for three correct. Award ***(A0)*** for two or fewer correct.

***[2 marks]***

**5b.** *[1 mark]*

## Markscheme

 ***(A1)*(ft) *(C1)***

***[1 mark]***

**5c.** *[2 marks]*

## Markscheme

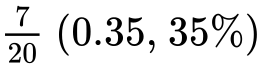
 ***(M1)(A1)*(ft)** ***(C2)***

**Note:** ***(M1)*** for attempt to order raw data (if frequency table not used) or ***(M1)*** halfway between 10th and 11th result.

***[2 marks]***

**5d.** *[1 mark]*

## Markscheme

 ***(A1)*(ft)** ***(C1)***

***[1 mark]***

**6a.** *[1 mark]*

## Markscheme

 ***(A1)***

**6b.** *[4 marks]*

## Markscheme

(i)  ***(G2)***

**Note:** Accept  .

(ii)  ***(G1)***  
(iii)  ***(G1)***

**6c.** *[2 marks]*

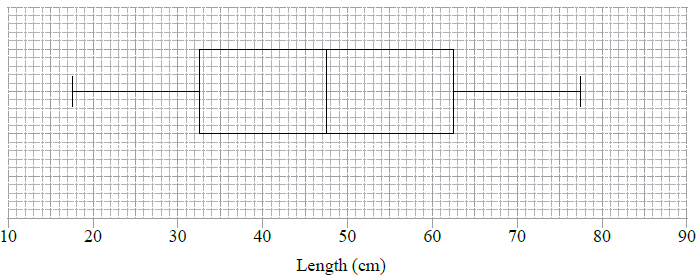
## Markscheme

 ***(M1)(A1)(G2)***

**Note:** Award ***(M1)*** for correct quartiles seen.

**6d.** *[4 marks]*

## Markscheme

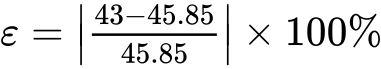


***(A1)*** for correct label and scale  
***(A1)*(ft)** for correct median  
***(A1)*(ft)** for correct quartiles and box  
***(A1)*** for endpoints at  and  joined to box by straight lines ***(A1)(A1)*(ft)*(A1)*(ft)*(A1)***

**Notes:** The final ***(A1)*** is lost if the lines go through the box. Follow through from their parts (b) and (c).

**6e.** *[2 marks]*

## Markscheme

 **(M1)**

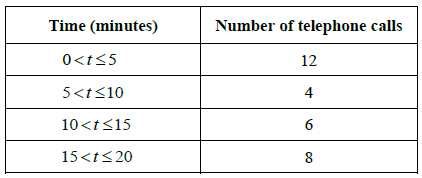
**Note:** Award ***(M1)*** for their correct substitution in  error formula.

 () ***(A1)*(ft)*(G2)***

**Notes:** Follow through from their answer to part (b)(i). Accept  with use of  .

**7a.** *[2 marks]*

## Markscheme

 ***(A2)*** ***(C2)***

**Note:** Award ***(A2)*** for four correct entries, ***(A1)*** for three correct entries, ***(A0)*** otherwise.

**7b.** *[1 mark]*

## Markscheme

 ***(A1)*** ***(C1)***

**7c.** *[1 mark]*

## Markscheme

 ***(A1)*** ***(C1)***

**7d.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for division with  seen.

 () ***(A1)*(ft)  *(C2)***

**Note:** Follow through from their parts (a) and (c), irrespective of whether working is shown.

**8a.** *[3 marks]*

## Markscheme

(i) 32.5 ***(A1)***

(ii) 31.9 ***(A1)***

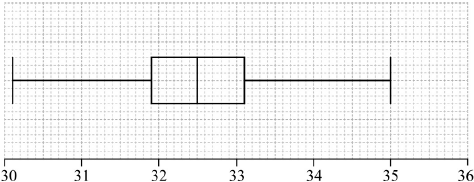
(iii) 33.1 ***(A1) (C3)***

**Note:** Answers must be given correct to 1 decimal place.

***[3 marks]***

**8b.** *[3 marks]*

## Markscheme



**Note:** Award ***(A1)*(ft)** for correct median, ***(A1)*(ft)** for correct quartiles and box, ***(A1)*** for correct end points of whiskers and straight whiskers.

Award at most ***(A1)(A1)(A0)*** if a horizontal line goes right through the box or if the whiskers are not well aligned with the midpoint of the box.

Follow through from part (a).

***[3 marks]***

**9a.** *[3 marks]*

## Markscheme

(i) 300 (minutes) **OR** 5 hours ***(A1)***

**Note:**If answer given in hours, the unit **must** be seen.

(ii) 220 – 100 ***(M1)***

**Notes:** Award ***(M1)*** for the two quartiles seen.

= 120 (minutes) **OR** 2 hours ***(A1) (C3)***

**Note:** If answer given in hours, the unit **must** be seen.

**9b.** *[1 mark]*

## Markscheme

median (time spent on homework per day) ***(A1) (C1)***

**Note:** Do not accept middle or medium etc.

**9c.** *[2 marks]*

## Markscheme

(i) 25 ***(A1)***

(ii) 75 ***(A1) (C2)***

**10a.** *[1 mark]*

## Markscheme

 ***(A1) (C1)***

***[1 mark]***

**10b.** *[1 mark]*

## Markscheme

 ***(A1) (C1)***

***[1 mark]***

**10c.** *[2 marks]*

## Markscheme

 ***(A1)***

 ***(A1) (C2)***

**Note:** Award ***(A1)*** for identifying correct quartiles, ***(A1)*** for correct subtraction of the quartiles.

***[2 marks]***

**10d.** *[2 marks]*

## Markscheme

(i) 20 (days) ***(A1)***

(ii) 60 (days) ***(A1) (C2)***

***[2 marks]***

**11a.** *[1 mark]*

## Markscheme

 kg ***(A1)*** ***(C1)***

***[1 mark]***

**11b.** *[2 marks]*

## Markscheme

 ***(A1)***  
 ***(A1)*(ft)  *(C2)***

**Note:** Award ***(A1)*** for identifying quartiles, ***(A1)*(ft)** for correct subtraction of their quartiles.

***[2 marks]***

**11c.** *[1 mark]*

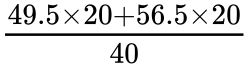
## Markscheme

 ***(A1)*** ***(C1)***

***[1 marks]***

**11d.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)*** for multiplication of midpoints by frequencies.

 kg ***(A1)*** ***(C2)***

***[2 marks]***

**12a.** *[1 mark]*

## Markscheme

30  ***(A1) (C1)***

***[1 mark]***

**12b.** *[1 mark]*

## Markscheme

32  ***(A1) (C1)***

***[1 mark]***

**12c.** *[2 marks]*

## Markscheme

38 – 10 = 28  ***(A1)(A1) (C2)***

**Note:** Award ***(A1)*** for 10 and 38 seen, ***(A1)*** for correct answer only.

***[2 marks]***

**12d.** *[2 marks]*

## Markscheme

0.25 × 56 = 14  ***(M1)(A1) (C2)***

**Note:** Award ***(M1)*** for multiplying 0.25 by 56.

***[2 marks]***

**13a.** *[1 mark]*

## Markscheme

 ***(A1) (C1)***

*Accept* 

***[1 mark]***

**13b.** *[2 marks]*

## Markscheme

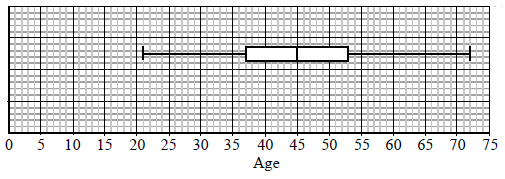
 *for identifying correct quartiles* ***(A1)***  
 *for correct answer to subtraction* ***(A1)*(ft) *(C2)***

**(ft)** *on their quartiles*

***[2 marks]***

**13c.** *[3 marks]*

## Markscheme



Median marked correctly. ***(A1)*(ft)**  
Box with ends at candidate’s quartiles. ***(A1)*(ft)**  
End points at  and  joined to box with straight lines. ***(A1)* *(C3)***

**Note:** Award ***(A0)*** if lines go right through the box.

***[3 marks]***

**14a.** *[1 mark]*

## Markscheme

48 ***(A1) (C1)***

**14b.** *[2 marks]*

## Markscheme

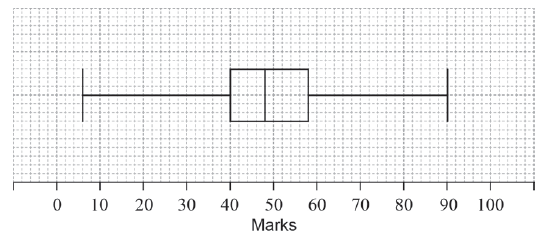
 ***(M1)***

**Note:** Award ***(M1)*** for 58 and 40 seen.

 ***(A1) (C2)***

**14c.** *[3 marks]*

## Markscheme



***(A1)(A1)*(ft)*(A1)*(ft) *(C3)***

**Note:** Award ***(A1)*** for the correct maximum and minimum, ***(A1)*(ft)** for their correct median and ***(A1)*(ft)** for 40 and their upper quartile.

Follow through from parts (a) and (b).

Award a maximum of ***(A1)(A1)*(ft)*(A0)*** if the horizontal line goes through the box or if a ruler has clearly not been used.

**15a.** *[1 mark]*

## Markscheme

3 ***(A1) (C1)***

***[1 mark]***

**15b.** *[2 marks]*

## Markscheme

4 ***(M1)(A1) (C2)***

**Note:** Award ***(M1***) for ordered list of numbers seen.

***[2 marks]***

**15c.** *[1 mark]*

## Markscheme

5.5 ***(A1) (C1)***

***[1 mark]***

**15d.** *[2 marks]*

## Markscheme

5.5 – 3 ***(M1)***

**Note:** Award ***(M1)*** for 3 and their 5.5 seen.

= 2.5 ***(A1)*(ft) *(C2)***

**Note:** Follow through from their answer to part (c).

***[2 marks]***

**16a.** *[1 mark]*

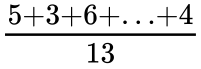
## Markscheme

 ***(A1) (C1)***

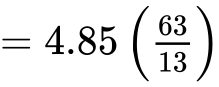
***[1 mark]***

**16b.** *[2 marks]*

## Markscheme

 ***(M1)***

**Note:** Award ***(M1)***for correctly substituted mean formula, division by 13 must be seen.

 ***(A1) (C2)***

***[2 marks]***

**16c.** *[1 mark]*

## Markscheme

  ***(A1) (C1)***

***[1 mark]***

**16d.** *[2 marks]*

## Markscheme

 ***(M1)***

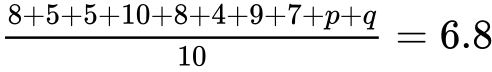
 ***(A1) (C2)***

**Note:** Award ***(M1)*** for their quartiles seen or a correct ordered list. Accept a correct ordered list from any previous part of the question.

***[2 marks]***

**17a.** *[2 marks]*

## Markscheme

 **or** *equivalent*  ***(M1)(A1) (C2)***

**Note:** Award ***(M1)***for correct substituted mean formula, ***(A1)***for correct substitution.

***[2 marks]***

**17b.** *[1 mark]*

## Markscheme

*p* = 5  ***(A1)*(ft)**

***[1 mark]***

**17c.** *[1 mark]*

## Markscheme

*q* = 7 ***(A1)*(ft) *(C2)***

**Note:** Follow through from their answers to parts (a) and (b) (i).

***[1 mark]***

**17d.** *[2 marks]*

## Markscheme

7  ***(M1)(A1)*(ft) *(C2)***

**Notes:** Award ***(M1)***for an attempt to order their numbers.

Follow through from their answers to parts (b)(i) and (ii).

***[2 marks]***

**18a.** *[3 marks]*

## Markscheme

 ***(A1)(A1)***

**Note:** Award ***(A1)*** for sum + *T*, ***(A1)*** for 56 or 7 × 8 or 8 in the denominator and 7 seen.

*T* = 10 ***(A1)*** ***(C3)***

***[3 marks]***

**18b.** *[1 mark]*

## Markscheme

4 ***(A1)*** ***(C1)***

***[1 mark]***

**18c.** *[2 marks]*

## Markscheme

4, 4, 4, 5, 7, 8, 10, 14 ***(M1)***

**Note:** Award ***(M1)*** for arranging their numbers in order.

Median = 6 ***(A1)*(ft)** ***(C2)***

***[2 marks]***

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