**IB MATH STUDIES EXAM REVIEW: Topic 2 Markscheme**

**Measures of Central Tendency, Measures of Spread, Grouped Data, Histograms, Stem-and-Leaf Plots, Box-and-Whisker Plots, Cumulative Frequency Graphs**

**1.** (a) *q* = 25 – (4 + 3 + 8 + 4 + 1) (M1)

**Note:** Award (M1)for subtraction from 25 of all values from the table.

 = 5 (A1) (C2)

(b) (i) 2.2 (A2)(ft) (C2)

**Note:** Award (M1)for use of mean formula with correct substitution. Follow through from part (a), irrespective of whether working is shown.

(ii) 2 (A1) (C1)

(iii) 1.39 (A1)(ft) (C1)

**Note:** Follow through from part (a), irrespective of whether working is shown. Award (A1)(AP)for 1.38.

[6]

**2.** (a)  (M1)

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

 1.75 (A1) (C2)

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

 2 (A1) (C2)

(c)  × 100 (M1)

 14.3 % (A1)(ft) (C2)

**Notes:** Award (M1)for correctly substituted % error formula.

% sign not required. Follow through from their answer to part (a).
If 100 is missing and answer incorrect award (M0)(A0). If 100 is missing and answer incorrectly rounded award (M1)(A1)(ft)(AP).

[6]

**3.** ***Unit penalty applies in parts (a) and (d)***

**UP** (a) 61 kg (A1) (C1)

(b) 66 – 52 (A1)
= 14 (A1)(ft) (C2)

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

(c) 20 (A1) (C1)

(d)  (M1)

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

**UP** = 53 kg (A1) (C2)

[6]

**4.** (a) (i) 30 (A1) (C1)

(ii) 32 (A1) (C1)

(iii) 38 – 10 **=** 28 (A1)(A1) (C2)

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

(b) 0.25 × 56 **=** 14 (M1)(A1) (C2)

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

[6]

**5.** (a) (i) 66 (sweets) (A1)

(ii) 52 (sweets) (A1)

(iii) 73 (sweets) (A1) (C3)

**Note:** If answers to lower and upper quartile are reversed award (A0)for (ii) and (A1)(ft)for (iii).

(b)

correct median (A1)(ft)
correct quartiles and box (A1)(ft)
endpoints at 42 and 82, joined to box by straight lines (A1) (C3)

**Notes:** Follow through from their answers to part (a). Award at most (A1)(ft)(A1)(ft)(A0)if lines go right through the box.

[6]

**6.** (a)  = 6.8 **or** *equivalent* (M1)(A1) (C2)

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

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

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

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

(c) 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).

[6]

**7.** ***Unit*** ***penalty*** ***applies*** ***in*** ***part*** ***(a)***

**UP** (a) Median = 25 mins (A1) (C1)

(b) 32 – 16 (A1)
**=** 16 (A1)(ft) (C2)

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

(c)



 median shown (A1)(ft)
box with ends at their quartiles (A1)(ft)
end points at 0 and 45 joined to box with straight lines (A1) (C3)

**Note:** Award (A1)(ft)(A1)(ft)(A0) if lines go right through the box.

[6]

**8.** (a) 55 (A1) (C1)

(i)  (62.6) (A2)(ft) (C2)

(ii) 8.86 (A1) (C1)

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

(c) 62.6 – 3 × 8.86 **=** 36.0 (M1)(A1)(ft) (C2)

**Note:** Accept 36.
Follow through from their values in part (b) o**nly** **if** **working** **is** **seen.**

[6]