**Self-assessment answers: 16 Summarising data**

**1.** Ordering data gives: 11, 21, 36, 44, 54, 62, 71, 84, 87

Q1 =  = 28.5 and Q3 =  = 77.5

IQR = 77.5 – 28.5 = 49 *[3 marks]*

**2.** Mean for 15 students is 5.2, so

5.2 = 

⇒  = 78

∴  = 78 + 4 = 8

So the mean for the whole class =  = 5.125. *[4 marks]*

**3.** (a) mean = 75.48, standard deviation = 15.37 (4SF) *[2 marks]*

(b) 0.719 (3SF) *[2 marks]*

(c) *y* = 2.724*x* + 5.327 *[2 marks]*

(d) *y* = (2.724 × 29) + 5.327 = 84.32 (4SF) *[1 mark]*

(e) Outside range of given data – extrapolation needed. *[1 mark]*

**4.** (a)

|  |  |
| --- | --- |
| **Time in minutes (*t*)** | **Frequency** |
| 6 < *t* ≤ 10 | 6 |
| 10 < *t* ≤ 15 | 6 |
| 15 < *t* ≤ 20 | 10 |
| 20 < *t* ≤ 30 | 16 |
| 30 < *t* ≤ 45 | 7 |

(b) Mean= 21.3 min,Variance = 82.8 min2

(c) Actual data values are not given, only groups. *[10 marks]*

**5.** Average monthly expenditure from January to August is $620, means:

620 = 

⇒  = 4960

Average monthly expenditure over the whole year is $586, means:

586 = 



So, total expenditure for September to December = 7032 – 4960 = 2072

Therefore, the mean for September to December  = 518 *[5 marks]*