

### Mean, Median, Mode, and Range Mark Scheme 2

|              |  |                                     |
|--------------|--|-------------------------------------|
| <b>1</b>     | Total marks for boys = 1012<br>Total mark for girls = 924  | [1] Totals calculated               |
|              | Mean mark = $(1012 + 924) \div 45$<br>= $1936 \div 45$   | [1] For dividing by 45              |
|              | $1936 \div 45 = 43.0$  | [1] For correct answer (to 1 d.p.)  |
| <b>2</b>     | Using trial and improvements<br><br>e.g. $2 \times 6 \text{ kg} + 1 \times 16 \text{ kg} = 28$<br>$\frac{28}{3} \neq 12$<br>$2 \times 6 \text{ kg} + 2 \times 16 \text{ kg} = 44$<br>$\frac{44}{4} \neq 12$<br>$3 \times 6 \text{ kg} + 2 \times 16 \text{ kg} = 50$<br>$\frac{50}{4} \neq 12$ | [1] For trial and improvement       |
|              | $2 \times 6 \text{ kg} + 3 \times 16 \text{ kg} = 60 \text{ kg}$<br>$\frac{60}{5} = 12 \text{ kg}$<br><br>Two 6 kg bags and three 16 kg bags   | [1] For least number of bags needed |
| <b>3 (a)</b> | Median = 1.5 kg  | [1]                                 |
|              | Mean = $10.8 \div 7 = 1.54 \text{ kg}$   | [1] (to 2 d.p.)                     |
|              | Mode = 1.3 kg  | [1]                                 |
| <b>3 (b)</b> | Range = 0.9 kg   | [1]                                 |
| <b>3 (c)</b> | Total weight of seven rabbits = 10.8 kg  | [1] Total calculated                |
|              | $5 \times 1.6 \text{ kg} = 8 \text{ kg}$   | [1] Total remaining                 |
|              | Total weight of two removed rabbits = $10.8 - 8 = 2.8 \text{ kg}$<br>So 1.1 kg and 1.7 kg <b>or</b> 1.3 kg and 1.8 kg  | [1] Final answer                    |
| <b>4</b>     | Mean pay = $50.64 \div 6 = \text{£}8.44$   | [1]                                 |
|              | Median = $\text{£}8.46$  | [1]                                 |
|              | Mode = $\text{£}8.48$  | [1]                                 |
|              | Yes, the mean, median and mode suggest that Sarah is correct to think that most of her friends are paid more.  | [1] Suitable explanation            |
| <b>5(a)</b>  | Mode = 14 minutes  | [1]                                 |
| <b>5(b)</b>  | Median = $(17 + 18) \div 2 = 17.5 \text{ minutes}$   | [1]                                 |
| <b>5(c)</b>  | Mean = $180 \div 10 = 18 \text{ minutes}$  | [1]                                 |
|              | Range = $27 - 11 = 16 \text{ minutes}$   | [1]                                 |

Turn over ►

|             |  |     |
|-------------|--|-----|
| <b>6</b>    | Facebook Mean = $463 \div 5 = 92$ minutes 36 seconds     | [1] |
|             | Twitter Mean = $480 \div 5 = 96$ minutes                 | [1] |
|             | Difference = 3 minutes 24 seconds                        | [1] |
| <b>7(a)</b> | Range: $180 \text{ cm} - 120 \text{ cm} = 60 \text{ cm}$ | [1] |
| <b>7(b)</b> | Median: 141 cm   | [1] |
| <b>7(c)</b> | Mode: 130 cm   | [1] |
| <b>7(d)</b> | Mean: $\frac{1864}{13}$                                  | [1] |
|             | = 143 cm (3 s.f.)  | [1] |

END