9. Mark schemes for Paper 3: reasoning

Qu.	Requirement	Mark	Additional guidance
1	Award **TWO** marks for numbers in order as shown: **68** 82 96 **110** 124 138 **152** If the answer is incorrect, award **ONE** mark for two numbers correct.	**Up to 2m**	
2a	9	**1m**	**Do not** accept –9 or 9–
2b	–6	**1m**	**Do not** accept 6–
3	Both clocks ticked, as shown: 03:45 ✓ 02:45 09:45 21:45 14:45 ✓	**1m**	Accept alternative unambiguous positive indications, e.g. clocks circled or underlined.
4a	△ = 32	**1m**	
4b	○ = 18	**1m**	If the answers to ○ and △ are incorrect, award **ONE** mark if △ + ○ = 50 unless ○ = 25
5	Numbers in order, as shown: 0.098 0.607 0.78 4.003 5.6	**1m**	

Qu.	Requirement	Mark	Additional guidance
6	Award **TWO** marks for the correct answer of 1.07 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 1.28 + 1.65 = 2.93 4 – 2.93 **OR** • 4 – 1.28 = 2.72 2.72 – 1.65 **OR** • 4 – 1.65 = 2.35 2.35 – 1.28	**Up to 2m**	Accept for **ONE** mark an answer of 107 metres as evidence of an appropriate method. Answer need not be obtained for the award of **ONE** mark.
7a	*c* **AND** *e*	**1m**	Letters may be given in either order.
7b	*a* **AND** *d*	**1m**	Letters may be given in either order.
8	Award **TWO** marks for the correct answer of 35p **OR** £0.35 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 50p + 20p + 10p + 10p + 5p = 95p £2.00 – 95p = £1.05 £1.05 ÷ 3	**Up to 2m**	Accept for **ONE** mark an answer of £35 **OR** £35p **OR** 0.35p as evidence of an appropriate method. Answer need not be obtained for the award of **ONE** mark.
9a	46	**1m**	The answer is a time interval (see page 10 for guidance).
9b	10:44	**1m**	The answer is a specific time (see page 11 for guidance).
10	C	**1m**	Accept 18
11	Award **TWO** marks for the correct answer of 2,970 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method with no more than one arithmetic error, e.g. • 11 × 6 = 66 66 × 45	**Up to 2m**	**Do not** accept sight of a correct multiplication only, e.g. 11 × 6 × 45, for **ONE** mark. Misreads are **not** allowed.

<table>
<tr><th>Qu.</th><th>Requirement</th><th>Mark</th><th>Additional guidance</th></tr>
<tr><td>12</td><td>The triangle has moved [6] squares to the right
and [5] squares down.</td><td>1m</td><td></td></tr>
<tr><td>13</td><td>Award TWO marks for the correct answer of 15

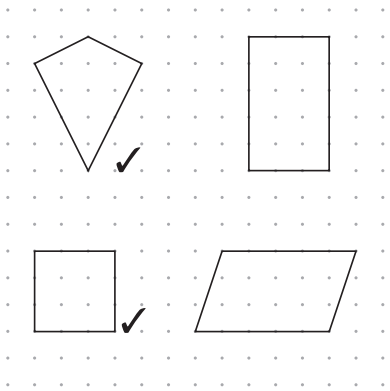
If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.
• 4.5 × 3 = 13.5
13.5 – 6 = 7.5
7.5 × 2</td><td>Up to 2m</td><td>Answer need not be obtained for the award of ONE mark.

Misreads are not allowed.</td></tr>
<tr><td>14a</td><td>3,600</td><td>1m</td><td>Misreads and transcription errors are not allowed.</td></tr>
<tr><td>14b</td><td>1,440</td><td>1m</td><td></td></tr>
<tr><td>15</td><td>Award TWO marks for three boxes completed correctly as shown:

<table><tr><th></th><th>Rounded to nearest hundred</th></tr><tr><td>20,906</td><td>20,900</td></tr><tr><td>2,090.6</td><td>2,100</td></tr><tr><td>209.06</td><td>200</td></tr></table>
If the answer is incorrect, award ONE mark for two boxes correct.</td><td>Up to 2m</td><td></td></tr>
<tr><td>16</td><td>Award TWO marks for the correct answer of 3

If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.
• 2.5 × 6 = 15
15 ÷ 5</td><td>Up to 2m</td><td>Answer need not be obtained for the award of ONE mark.

Misreads are not allowed.</td></tr>
<tr><td>17</td><td>A</td><td>1m</td><td>Accept alternative unambiguous positive indications of the correct triangle, e.g. $2\frac{1}{2}$ or 2.5</td></tr>
</table>

Qu.	Requirement	Mark	Additional guidance
18	Award **TWO** marks for both kite **AND** square ticked as shown.  If the answer is incorrect, award **ONE** mark for: • kite **AND** square and not more than one incorrect shape ticked **OR** • one correct shape only ticked.	**Up to 2m**	Accept alternative unambiguous positive indications, e.g. shapes circled.
19	Numbers circled as shown: **200** 2,000 **5,000** 50,000	**1m**	Accept alternative unambiguous positive indications, e.g. numbers ticked or underlined.
20	Award **TWO** marks for the correct answer of £11.40 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • £1.25 + £1.60 = £2.85 £2.85 × 4	**Up to 2m**	Accept for **ONE** mark an answer of £1,140 **OR** £1,140p **OR** £11.4 as evidence of an appropriate method. Answer need not be obtained for the award of **ONE** mark.
21	An explanation that shows that 5,868 can be made by adding 326 to 17 × 326, e.g. • '5542 + 326 = 18 × 326' • '18 × 326 is 326 more than 5,542' • 'Because this is the same as 17 × 326 = 5542 so add one more 326 to get the answer' • 'You add 326 to 5,542 and your answer will be correct' • 'Because you can add 326 to the answer of 17 × 326' • '5542 + 326'.	**1m**	**Do not** accept an explanation that simply calculates 326 × 18 = 5,868 **Do not** accept vague or incomplete, or incorrect explanations, e.g. • 'You could add another 326' • 'The difference between 17 and 18 is 1 so you add 326 and that is one more' • 'Because if you turn the question around you would see that 17 × 326 = 5542 so all you need to do is times the number one more time' • '5,542 + 326 because it is one more'. • 5868 – 326 = 5542