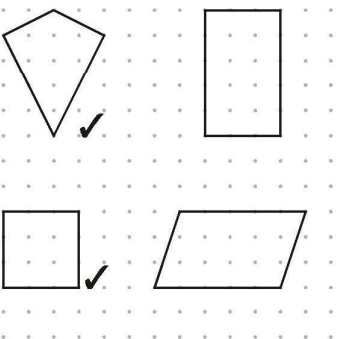
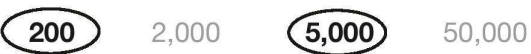


9. Mark schemes for Paper 3: reasoning

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: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">03:45</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">02:45</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">09:45</div> </div> <div style="text-align: center; margin: 10px 0;">✓</div> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">21:45</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">14:45</div> </div> <div style="text-align: center; margin: 10px 0;">✓</div>	1m	Accept alternative unambiguous positive indications, e.g. clocks circled or underlined.
4a	▲ = 32	1m	If the answers to ● and ▲ are incorrect, award ONE mark if ▲ + ● = 50 unless ● = 25
4b	● = 18	1m	
5	Numbers in order, as shown: <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">0.098</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">0.607</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">0.78</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">4.003</div> <div style="border: 1px solid black; padding: 2px 10px; margin: 5px;">5.6</div> </div>	1m	

Qu.	Requirement	Mark	Additional guidance
6	<p>Award TWO marks for the correct answer of 1.07</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> $1.28 + 1.65 = 2.93$ $4 - 2.93$ <p>OR</p> <ul style="list-style-type: none"> $4 - 1.28 = 2.72$ $2.72 - 1.65$ <p>OR</p> <ul style="list-style-type: none"> $4 - 1.65 = 2.35$ $2.35 - 1.28$ 	Up to 2m	<p>Accept for ONE mark an answer of 107 metres as evidence of an appropriate method.</p> <p>Answer need not be obtained for the award of ONE mark.</p>
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	<p>Award TWO marks for the correct answer of 35p OR £0.35</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> $50p + 20p + 10p + 10p + 5p = 95p$ $£2.00 - 95p = £1.05$ $£1.05 \div 3$ 	Up to 2m	<p>Accept for ONE mark an answer of £35 OR £35p OR 0.35p as evidence of an appropriate method.</p> <p>Answer need not be obtained for the award of ONE mark.</p>
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	<p>Award TWO marks for the correct answer of 2,970</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method with no more than one arithmetic error, e.g.</p> <ul style="list-style-type: none"> $11 \times 6 = 66$ 66×45 	Up to 2m	<p>Do not accept sight of a correct multiplication only, e.g. $11 \times 6 \times 45$, for ONE mark.</p> <p>Misreads are not allowed.</p>

Qu.	Requirement	Mark	Additional guidance								
12	The triangle has moved <table border="1"><tr><td>6</td></tr></table> squares to the right and <table border="1"><tr><td>5</td></tr></table> squares down.	6	5	1m							
6											
5											
13	<p>Award TWO marks for the correct answer of 15</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none">$4.5 \times 3 = 13.5$ $13.5 - 6 = 7.5$ 7.5×2	Up to 2m	<p>Answer need not be obtained for the award of ONE mark.</p> <p>Misreads are not allowed.</p>								
14a	3,600	1m	Misreads and transcription errors are not allowed.								
14b	1,440	1m									
15	<p>Award TWO marks for three boxes completed correctly as shown:</p> <table border="1"><tr><td></td><td>Rounded to nearest hundred</td></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> <p>If the answer is incorrect, award ONE mark for two boxes correct.</p>		Rounded to nearest hundred	20,906	20,900	2,090.6	2,100	209.06	200	Up to 2m	
	Rounded to nearest hundred										
20,906	20,900										
2,090.6	2,100										
209.06	200										
16	<p>Award TWO marks for the correct answer of 3</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none">$2.5 \times 6 = 15$ $15 \div 5$	Up to 2m	<p>Answer need not be obtained for the award of ONE mark.</p> <p>Misreads are not allowed.</p>								
17	A	1m	Accept alternative unambiguous positive indications of the correct triangle, e.g. $2\frac{1}{2}$ or 2.5								

Qu.	Requirement	Mark	Additional guidance
18	<p>Award TWO marks for both kite AND square ticked as shown.</p>  <p>If the answer is incorrect, award ONE mark for:</p> <ul style="list-style-type: none"> kite AND square and not more than one incorrect shape ticked <p>OR</p> <ul style="list-style-type: none"> one correct shape only ticked. 	Up to 2m	Accept alternative unambiguous positive indications, e.g. shapes circled.
19	<p>Numbers circled as shown:</p> 	1m	Accept alternative unambiguous positive indications, e.g. numbers ticked or underlined.
20	<p>Award TWO marks for the correct answer of £11.40</p> <p>If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g.</p> <ul style="list-style-type: none"> $\text{£}1.25 + \text{£}1.60 = \text{£}2.85$ $\text{£}2.85 \times 4$ 	Up to 2m	<p>Accept for ONE mark an answer of £1,140 OR £1,140p OR £11.4 as evidence of an appropriate method.</p> <p>Answer need not be obtained for the award of ONE mark.</p>
21	<p>An explanation that shows that 5,868 can be made by adding 326 to 17×326, e.g.</p> <ul style="list-style-type: none"> '$5542 + 326 = 18 \times 326$' '$18 \times 326$ is 326 more than 5,542' 'Because this is the same as $17 \times 326 = 5542$ 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	<p>Do not accept an explanation that simply calculates $326 \times 18 = 5,868$</p> <p>Do not accept vague or incomplete, or incorrect explanations, e.g.</p> <ul style="list-style-type: none"> '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 $17 \times 326 = 5542$ so all you need to do is times the number one more time' '$5,542 + 326$ because it is one more'. $5868 - 326 = 5542$