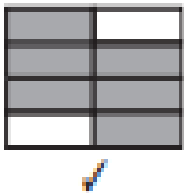
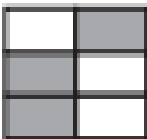
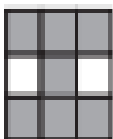
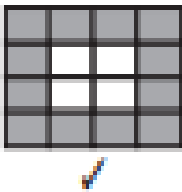



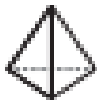
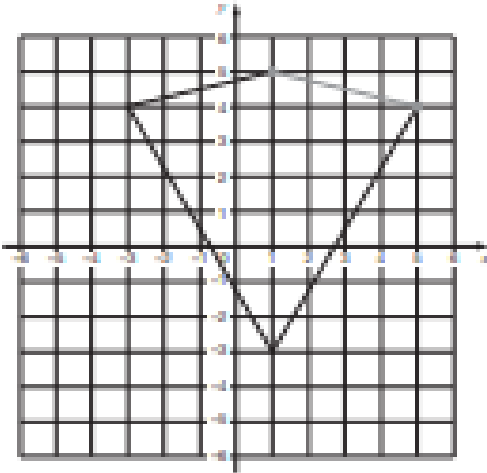


8. Mark schemes for Paper 2: reasoning

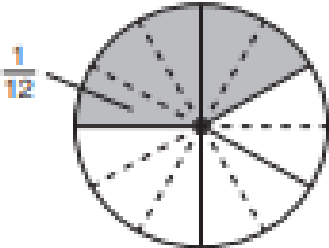
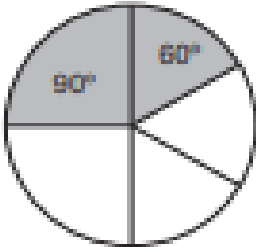
Qu.	Requirement	Mark	Additional guidance																
1a	200	1m																	
1b	50	1m																	
2	The correct number circled as shown: 9,700 907 9,007 970 9,070	1m	Accept alternative unambiguous positive indications, e.g. number ticked.																
3	Three boxes completed correctly as shown: <table style="border-collapse: collapse; margin: 10px 0;"> <tr> <td style="border: none; padding-right: 10px;">×</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">7</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">6</td> <td style="border: none;"></td> </tr> <tr> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border: none;"></td> <td style="border-top: 1px solid black;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">9</td> <td style="padding: 5px;">63</td> <td style="padding: 5px;">54</td> <td style="border: none;"></td> </tr> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">8</td> <td style="padding: 5px;">56</td> <td style="padding: 5px;">48</td> <td style="border: none;"></td> </tr> </table>	×	7	6						9	63	54		8	56	48		1m	
×	7	6																	
9	63	54																	
8	56	48																	
4	Award TWO marks for the correct answer of 1,609 If the answer is incorrect, award ONE mark for evidence of an appropriate method, e.g. <ul style="list-style-type: none"> • $5,895 + 1,344 = 7,239$ • $8,848 - 7,239$ 	Up to 2m	Answer need not be obtained for the award of ONE mark.																
5	Award TWO marks for three boxes completed correctly as shown: <table border="1" style="border-collapse: collapse; margin: 10px 0;"> <thead> <tr> <th style="padding: 5px;">Number</th> <th style="padding: 5px;">1,000 more</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px; text-align: center;">3,500</td> <td style="padding: 5px; text-align: center;">4,500</td> </tr> <tr> <td style="padding: 5px; text-align: center;">85</td> <td style="padding: 5px; text-align: center;">1,085</td> </tr> <tr> <td style="padding: 5px; text-align: center;">8,099</td> <td style="padding: 5px; text-align: center;">9,099</td> </tr> <tr> <td style="padding: 5px; text-align: center;">14,250</td> <td style="padding: 5px; text-align: center;">15,250</td> </tr> </tbody> </table> If the answer is incorrect, award ONE mark for two boxes completed correctly.	Number	1,000 more	3,500	4,500	85	1,085	8,099	9,099	14,250	15,250	Up to 2m							
Number	1,000 more																		
3,500	4,500																		
85	1,085																		
8,099	9,099																		
14,250	15,250																		
6	Numbers in order as shown: <table style="display: inline-table; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="border: 1px solid black; padding: 5px; text-align: center;">0.328</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">0.96</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1.253</td> <td style="border: 1px solid black; padding: 5px; text-align: center;">1.9</td> </tr> </table>	0.328	0.96	1.253	1.9	1m													
0.328	0.96	1.253	1.9																

Qu.	Requirement	Mark	Additional guidance
7	<p>Award TWO marks for three boxes completed correctly as shown:</p> <p>60 months = <input type="text" value="5"/> years</p> <p>72 hours = <input type="text" value="3"/> days</p> <p>84 days = <input type="text" value="12"/> weeks</p> <p>If the answer is incorrect, award ONE mark for two boxes completed correctly.</p>	Up to 2m	
8	<p>Award TWO marks for the correct answer of 1,048</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"> • $1,793 + 8,728 = 10,521$ $10,521 - 9,473$ <p>OR</p> <ul style="list-style-type: none"> • $9,473 - 8,728 = 745$ $1,793 - 745$ 	Up to 2m	Answer need not be obtained for the award of ONE mark.
9	<p>Both shapes ticked as shown:</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 20px;"> <div style="text-align: center;">  </div> <div style="text-align: center;">  </div> </div>	1m	Accept alternative unambiguous positive indications, e.g. shapes circled.

Qu.	Requirement	Mark	Additional guidance
10	<p>Award TWO marks for three boxes completed correctly as shown:</p> <p>to the nearest 10 <input type="text" value="84,520"/></p> <p>to the nearest 100 <input type="text" value="84,500"/></p> <p>to the nearest 1,000 <input type="text" value="85,000"/></p> <p>If the answer is incorrect, award ONE mark for two boxes completed correctly.</p>	Up to 2m	
11a	140	1m	The answer is a time interval (see page 14 for guidance).
11b	2	1m	
12	<p>Award TWO marks for both pyramids ticked as shown:</p> <p> Cube <input type="checkbox"/></p> <p> Square-based pyramid <input checked="" type="checkbox"/></p> <p> Triangular prism <input type="checkbox"/></p> <p> Triangular-based pyramid <input checked="" type="checkbox"/></p> <p>If the answer is incorrect, award ONE mark for:</p> <ul style="list-style-type: none"> the two pyramids and not more than one incorrect shape ticked <p>OR</p> <ul style="list-style-type: none"> only one correct shape ticked and no incorrect shape ticked. 	Up to 2m	Accept alternative unambiguous positive indications, e.g. Y.

Qu.	Requirement	Mark	Additional guidance
13	<p>Award TWO marks for the correct answer of £1.39</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"> • $12 \times 99p = \text{£}11.88$ $\text{£}11.88 = \text{£}10.49$ 	Up to 2m	<p>Accept for ONE mark an answer of £139 OR £139p as evidence of an appropriate method.</p> <p>Answer need not be obtained for the award of ONE mark.</p>
14	18	1m	Accept 18:12 OR 12:18
15	2006	1m	Do not accept 'two thousand and six' in words.
16	540	1m	
17	<p>Quadrilateral completed as shown:</p> 	1m	Accept slight inaccuracies in drawing (see page 12 for guidance).
18	75	1m	
19	<p>Award TWO marks for the correct answer of £1.68</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"> • $20 - 14.96 = 5.04$ $5.04 \div 3$ 	Up to 2m	<p>Accept for ONE mark an answer of £168 OR £168p as evidence of an appropriate method.</p> <p>Answer need not be obtained for the award of ONE mark.</p>

Qu.	Requirement	Mark	Additional guidance
20	<p>An explanation showing that 0.25 is less than $\frac{2}{5}$, e.g.</p> <ul style="list-style-type: none"> $\frac{2}{5}$ is $0.4 > 0.25$ 0.25 is $\frac{5}{20} < \frac{8}{20}$ 0.25 is 25% and $\frac{2}{5}$ is 40% and 25% is smaller than 40% 0.25 is a quarter. You need 8 quarters to make 2, but only 5 lots of $\frac{2}{5}$ to make 2 $\frac{2}{5} = 0.4$ $\frac{1}{4}$ is $\frac{1}{4}$ smaller than a half, but $\frac{2}{5}$ is only $\frac{1}{10}$ smaller, so $\frac{1}{4}$ is smaller than $\frac{2}{5}$ 	1m	<p>Do not accept vague, incomplete or incorrect explanations, e.g.</p> <ul style="list-style-type: none"> Because $\frac{1}{4}$ is bigger than $\frac{2}{5}$ Because $\frac{1}{4}$ comes first on a number line Because 0.25 is $\frac{1}{4}$ <p>Accept $\frac{2.5}{10}$ as an equivalent to $\frac{1}{4}$ in an explanation when comparing to $\frac{4}{10}$</p>
21	<p>Award TWO marks for the correct answer of 12.5</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"> $250 \div 20$ <p>OR</p> <ul style="list-style-type: none"> 20km is 1cm 100km is 5cm 50km is 2.5cm 5cm + 5cm + 2.5cm 	Up to 2m	<p>Answer need not be obtained for the award of ONE mark.</p> <p>Do not accept incorrect proportions in any step without evidence of the calculation performed.</p>
22	1:4	1m	<p>Accept other equivalent ratios, e.g. 2:8 or 0.5:2</p> <p>Do not accept reversed ratios, e.g. 4:1 or 8:2</p>

Qu.	Requirement	Mark	Additional guidance
23	<p>Award TWO marks for the correct answer of $\frac{7}{12}$</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"> • $\frac{1}{4} + \frac{1}{6} =$ $\frac{3}{12} + \frac{2}{12} = \frac{5}{12}$ $1 - \frac{5}{12}$ <p>OR</p> <ul style="list-style-type: none"> • $\frac{1}{4} + \frac{1}{6} + \frac{1}{6}$ <p>OR</p> <ul style="list-style-type: none"> • $1 - \frac{1}{4} - \frac{1}{6}$ <p>OR</p> <ul style="list-style-type: none"> •  <p>$\frac{3}{12} + \frac{4}{12}$</p> <p>OR</p> <ul style="list-style-type: none"> •  <p>$90^\circ + 60^\circ = 150^\circ$ $1 - \frac{150}{360}$</p>	Up to 2m	<p>Accept equivalent fractions or an exact decimal equivalent, e.g. $0.58\bar{3}$</p> <p>Accept for ONE mark an answer between 0.58 and 0.59 inclusive.</p> <p>Answer need not be obtained for the award of ONE mark.</p>