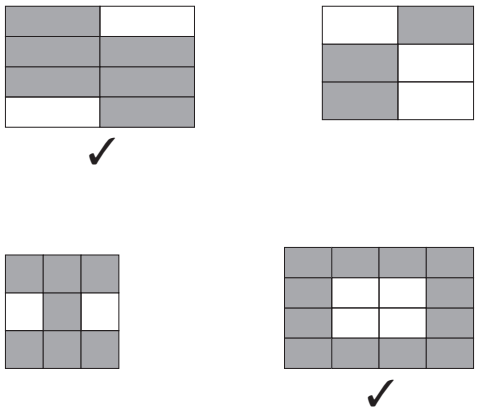
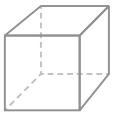
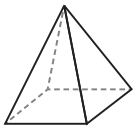
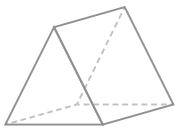
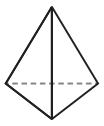
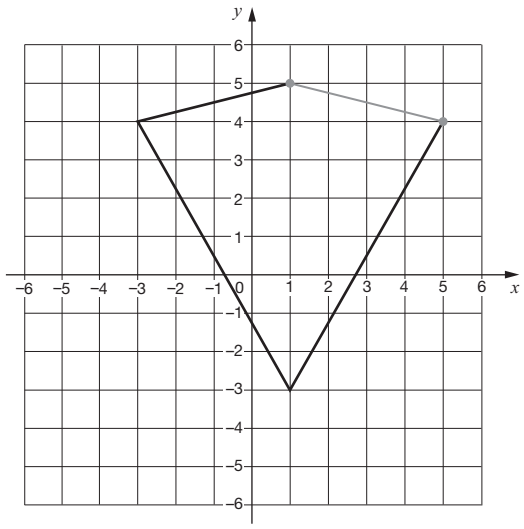
8. Mark schemes for Paper 2: reasoning

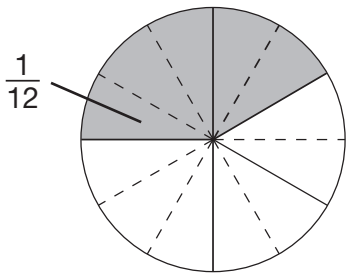
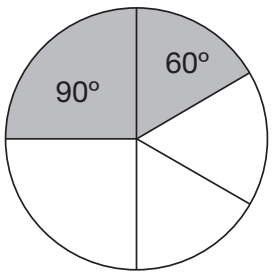
Qu.	Requirement	Mark	Additional guidance
1a	200	1m	
1b	50	1m	
2	The correct number circled as shown: 9,700 907 9,007 970 (9,070)	1m	Accept alternative unambiguous positive indications, e.g. number ticked.
3	Three boxes completed correctly as shown: × | 7 | 6 9 | 63 | 54 8 | 56 | 48	1m	
4	Award **TWO** marks for the correct answer of 1,609 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 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: Number | 1,000 more 3,500 | 4,500 85 | 1,085 8,099 | 9,099 14,250 | 15,250 If the answer is incorrect, award **ONE** mark for two boxes completed correctly.	Up to 2m	
6	Numbers in order as shown: 0.328 0.96 1.253 1.9	1m	

Qu.	Requirement	Mark	Additional guidance
7	Award **TWO** marks for three boxes completed correctly as shown: 60 months = [5] years 72 hours = [3] days 84 days = [12] weeks If the answer is incorrect, award **ONE** mark for two boxes completed correctly.	**Up to 2m**	
8	Award **TWO** marks for the correct answer of 1,048 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 1,793 + 8,728 = 10,521 10,521 – 9,473 **OR** • 9,473 – 8,728 = 745 1,793 – 745	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark.
9	Both shapes ticked as shown: 	**1m**	Accept alternative unambiguous positive indications, e.g. shapes circled.

Qu.	Requirement	Mark	Additional guidance
10	Award **TWO** marks for three boxes completed correctly as shown: to the nearest 10: 84,520 to the nearest 100: 84,500 to the nearest 1,000: 85,000 If the answer is incorrect, award **ONE** mark for two boxes completed correctly.	**Up to 2m**	
11a	140	**1m**	The answer is a time interval (see page 14 for guidance).
11b	2	**1m**	
12	Award **TWO** marks for both pyramids ticked as shown:  Cube ☐  Square-based pyramid ☑  Triangular prism ☐  Triangular-based pyramid ☑ If the answer is incorrect, award **ONE** mark for: • the two pyramids and not more than one incorrect shape ticked **OR** • 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	Award **TWO** marks for the correct answer of £1.39 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 12 × 99p = £11.88 £11.88 – £10.49	**Up to 2m**	Accept for **ONE** mark an answer of £139 **OR** £139p as evidence of an appropriate method. Answer need not be obtained for the award of **ONE** mark.
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	Quadrilateral completed as shown:  	**1m**	Accept slight inaccuracies in drawing (see page 12 for guidance).
18	75	**1m**	
19	Award **TWO** marks for the correct answer of £1.68 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 20 – 14.96 = 5.04 5.04 ÷ 3	**Up to 2m**	Accept for **ONE** mark an answer of £168 **OR** £168p as evidence of an appropriate method. Answer need not be obtained for the award of **ONE** mark.

Qu.	Requirement	Mark	Additional guidance
20	An explanation showing that 0.25 is less than $\frac{2}{5}$, e.g. • $\frac{2}{5}$ 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**	**Do not** accept vague, incomplete or incorrect explanations, e.g. • Because $\frac{1}{4}$ is bigger than $\frac{2}{5}$ • Because $\frac{1}{4}$ comes first on a number line • Because 0.25 is $\frac{1}{4}$ Accept $\frac{2.5}{10}$ as an equivalent to $\frac{1}{4}$ in an explanation when comparing to $\frac{4}{10}$
21	Award **TWO** marks for the correct answer of 12.5 If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • 250 ÷ 20 **OR** • 20 km is 1 cm 100 km is 5 cm 50 km is 2.5 cm 5 cm + 5 cm + 2.5 cm	**Up to 2m**	Answer need not be obtained for the award of **ONE** mark. **Do not** accept incorrect proportions in any step without evidence of the calculation performed.
22	1:4	**1m**	Accept other equivalent ratios, e.g. 2:8 or 0.5:2 **Do not** accept reversed ratios, e.g. 4:1 or 8:2

Qu.	Requirement	Mark	Additional guidance
23	Award **TWO** marks for the correct answer of $\frac{7}{12}$ If the answer is incorrect, award **ONE** mark for evidence of an appropriate method, e.g. • $\frac{1}{4}+\frac{1}{6}=$ $\frac{3}{12}+\frac{2}{12}=\frac{5}{12}$ $1-\frac{5}{12}$ **OR** • $\frac{1}{4}+\frac{1}{6}+\frac{1}{6}$ **OR** • $1-\frac{1}{4}-\frac{1}{6}$ **OR** •  $\frac{3}{12}+\frac{4}{12}$ **OR** •  $90°+60°=150°$ $1-\frac{150}{360}$	**Up to 2m**	Accept equivalent fractions or an **exact** decimal equivalent, e.g. $0.58\overline{3}$ Accept for **ONE** mark an answer between 0.58 and 0.59 inclusive. Answer need not be obtained for the award of **ONE** mark.