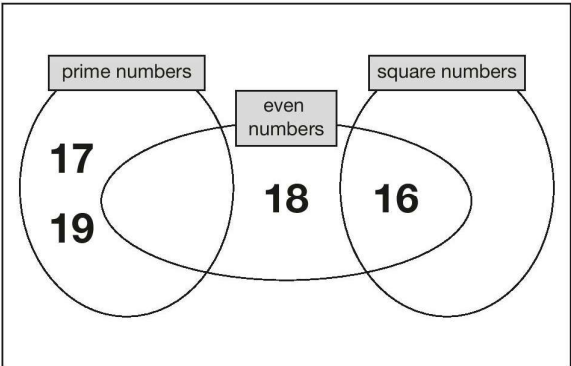
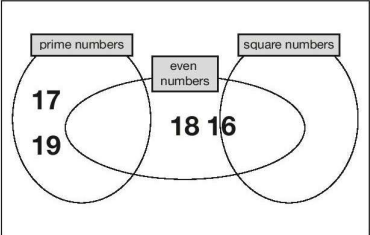
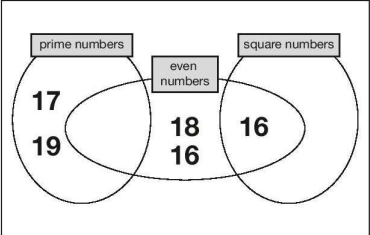
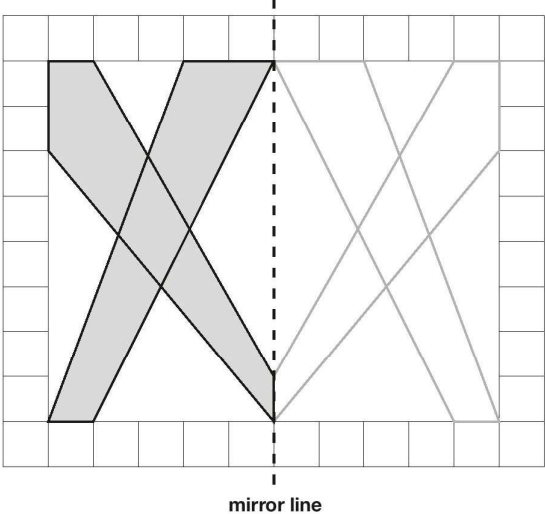
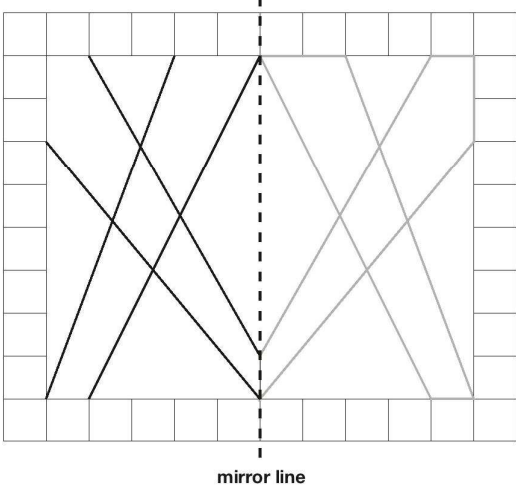
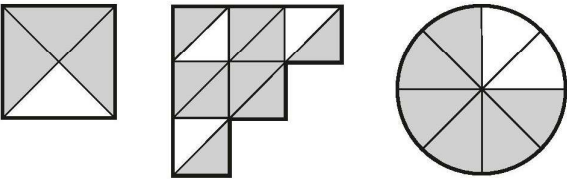


8. Mark schemes for Paper 2: reasoning

Qu.	Requirement	Mark	Additional guidance
1a	499	1m	
1b	555	1m	
2	Award ONE mark for the correct answer as shown: • <u>E</u> <u>B</u> <u>C</u> <u>D</u> <u>A</u>	1m	Accept: • <u>£91,500</u> <u>B</u> <u>£130,500</u> <u>£131,500</u> <u>£135,300</u>
3	Award TWO marks for: $\begin{array}{r} 15\boxed{1} \\ + 4\boxed{6}4 \\ \hline \boxed{6}15 \end{array}$ If the answer is incorrect, award ONE mark for two digits correct.	Up to 2m	
4a	191,118	1m	
4b	48,361	1m	
5	Award TWO marks for all four numbers placed correctly as shown:  If the answer is incorrect, award ONE mark for three numbers placed correctly.	Up to 2m	Accept alternative unambiguous indications, e.g. lines drawn from the numbers to the appropriate regions of the diagram. Do not accept numbers written in more than one region, e.g.  OR 

Qu.	Requirement	Mark	Additional guidance
6	<p>Diagram completed correctly as shown:</p> 	1m	<p>Accept inaccurate drawing, provided the intention is clear.</p> <p>Diagram need not be shaded.</p> <p>Diagram need not include edges drawn along the gridlines, e.g.</p> 
7a	$\frac{\boxed{2}}{3} = \frac{8}{12} = \frac{4}{\boxed{6}}$	1m	
7b		1m	
8	<p>Numbers circled as shown:</p> <p>$\textcircled{0.05}$ 0.23 $\textcircled{0.2}$ 0.5</p>	1m	<p>Accept alternative unambiguous positive indications, e.g. numbers ticked or underlined.</p>
9	<p>Award TWO marks for the correct answer of 25p</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"> • $168 \div 2 = 84$ 109 – 84 <p>OR</p> <ul style="list-style-type: none"> • $168 \div 6 = 28$ $3 \times 28 = 84$ 109 – 84 	Up to 2m	<p>Accept for TWO marks, an answer given in the acceptable notation (see page 10 for guidance).</p> <p>Answer need not be obtained for the award of ONE mark.</p> <p>Accept for ONE mark an answer of 0.25p OR £25p OR £25 as evidence of an appropriate method.</p>

Qu.	Requirement	Mark	Additional guidance
10	<p>Award TWO marks for all three diagrams completed to show three-quarters shaded, e.g.</p>  <p>If the answer is incorrect, award ONE mark for two diagrams correct.</p>	Up to 2m	Accept alternative unambiguous indications of parts shaded.
11	<p>Award TWO marks for the correct answer of 30</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"> 1.5 kg = 1,500g 1,500 ÷ 50 	Up to 2m	<p>Answer need not be obtained for the award of ONE mark.</p> <p>Units must be converted correctly for the award of ONE mark.</p>
12a	53	1m	
12b	48	1m	
13	<p>Award TWO marks for the correct answer of 119</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"> 140 ÷ 20 = 7 3 × 7 = 21 140 – 21 <p>OR</p> <ul style="list-style-type: none"> 140 ÷ 20 = 7 20 – 3 = 17 17 × 7 	Up to 2m	Answer need not be obtained for the award of ONE mark.

Qu.	Requirement	Mark	Additional guidance
14	24 AND 48 only	1m	Numbers may be given in either order.
15	<p>Award TWO marks for the correct answer of 77°F</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"> • $86 - 68 = 18$ $18 \div 2 = 9$ $9 + 68$ <p>OR</p> <ul style="list-style-type: none"> • $86 - 68 = 18$ $18 \div 2 = 9$ $86 - 9$ <p>OR</p> <ul style="list-style-type: none"> • $86 + 68 = 154$ $154 \div 2$ 	Up to 2m	Answer need not be obtained for the award of ONE mark.
16a	9,999,995	1m	
16b	5,900,000	1m	
17a	160	1m	
17b	20	1m	If the answers to a and b are incorrect, award ONE mark if $a + b = 180^\circ$ unless b is between 33° and 37° inclusive, or 90°
18	20	1m	

Qu.	Requirement	Mark	Additional guidance
19	<p>Award THREE marks for the correct answer of £111.70</p> <p>If the answer is incorrect, award TWO marks for:</p> <ul style="list-style-type: none"> sight of £90 AND £7.90 AND £13.80 as all multiplication steps completed correctly <p>OR</p> <ul style="list-style-type: none"> evidence of an appropriate complete method with no more than one arithmetic error, e.g. $\begin{array}{r} 7.50 \\ \times 12 \\ \hline 88.80 \\ \text{(error)} \end{array} \quad \begin{array}{r} 79 \\ \times 10 \\ \hline 790 \end{array} \quad \begin{array}{r} 6.90 \\ \times 2 \\ \hline 13.80 \end{array}$ $88.80 + 7.90 + 13.80 = 110.50$ <p>Award ONE mark for evidence of an appropriate complete method.</p>	Up to 3m	<p>Accept for TWO marks, sight of 9,000p AND 790p AND 1,380p as all multiplication steps completed correctly.</p> <p>Answer need not be obtained for the award of ONE mark.</p> <p>A misread of a number may affect the award of marks. No marks are awarded if there is more than one misread or if the mathematics is simplified.</p> <p>TWO marks will be awarded if an appropriate complete method with the misread number is followed through correctly.</p> <p>ONE mark will be awarded for:</p> <ul style="list-style-type: none"> all multiplication steps completed correctly with the misread number <p>OR</p> <ul style="list-style-type: none"> evidence of an appropriate complete method with the misread number followed through correctly with no more than one arithmetic error.
20	(-10, -40)	1m	