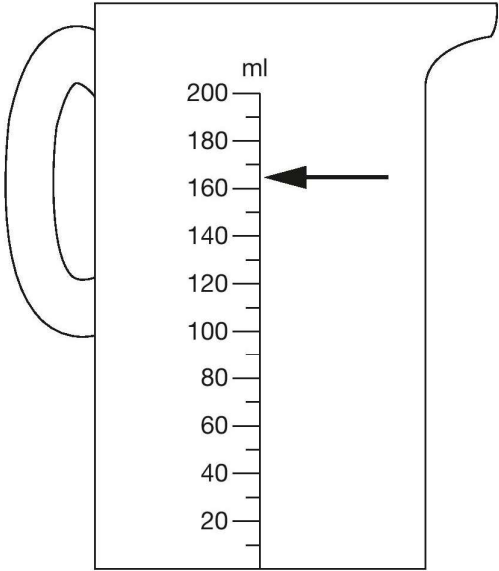
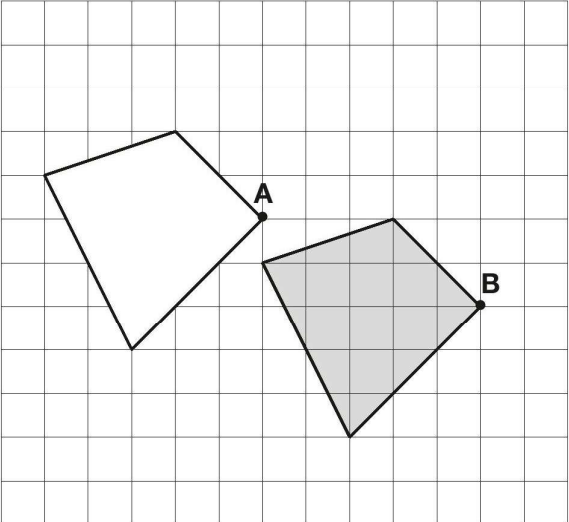


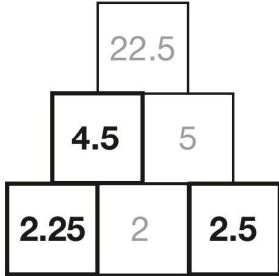
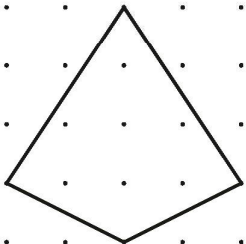
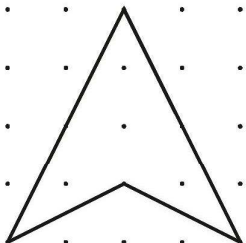
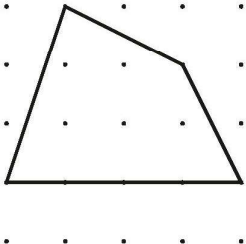
9. Mark schemes for Paper 3: reasoning

Qu.	Requirement	Mark	Additional guidance									
1	<p>Award TWO marks for three boxes completed correctly, e.g.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td></td> <td>multiple of 5</td> <td>not a multiple of 5</td> </tr> <tr> <td>multiple of 3</td> <td>30</td> <td>3, 6, 9 etc</td> </tr> <tr> <td>not a multiple of 3</td> <td>5, 10, 20 etc</td> <td>1, 2, 4, 7 etc</td> </tr> </table> <p>If the answer is incorrect, award ONE mark for at least two boxes completed correctly.</p>		multiple of 5	not a multiple of 5	multiple of 3	30	3, 6, 9 etc	not a multiple of 3	5, 10, 20 etc	1, 2, 4, 7 etc	Up to 2m	<p>Accept more than one correct multiple in any box.</p> <p>Do not accept any box containing a correct multiple and an incorrect number.</p>
	multiple of 5	not a multiple of 5										
multiple of 3	30	3, 6, 9 etc										
not a multiple of 3	5, 10, 20 etc	1, 2, 4, 7 etc										
2	<p>Award TWO marks for both numbers correct as shown.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="text-align: center;">-12</td> <td style="text-align: center;">-5</td> <td style="text-align: center;">2</td> </tr> </table> <p>If the answer is incorrect, award ONE mark for one number correct.</p>	-12	-5	2	Up to 2m	<p>Do not accept 12–</p> <p>Accept +2 in the right-hand box.</p>						
-12	-5	2										
3a	4	1m	Do not accept four OR 400									
3b	6	1m	Do not accept six OR $\frac{6}{100}$									
<p>Question 3 commentary: This question assesses place value in whole numbers up to 1 000 000 (5N3a) and in decimals (5F6b).</p>												
4a	February and April in either order.	1m	<p>Accept alternative unambiguous indications, e.g. F and A.</p> <p>Do not accept the amounts collected in February and April, i.e. £55 and £65</p>									
4b	£80	1m										

Qu.	Requirement	Mark	Additional guidance
5	<p>Arrow or line drawn to a point in the range 160ml to 170ml exclusive.</p> 	1m	Do not accept arrow drawn to 160ml or 170ml.
6	<p>Award TWO marks for all three calculations completed correctly, as shown:</p> $5.3 \quad \boxed{\div 10} = 0.53$ $5.3 \quad \boxed{\times 1000} = 5300$ $5.3 \quad \boxed{\div 100} = 0.053$ <p>If the answer is incorrect, award ONE mark for two calculations correct.</p>	Up to 2m	
7	Fifty-three thousand, one hundred and forty-eight	1m	

Qu.	Requirement	Mark	Additional guidance
8	<p>Award TWO marks for three vertices of the shape, excluding B, translated correctly as shown below:</p>  <p>If the answer is incorrect, award ONE mark for two vertices, excluding B, translated correctly.</p>	Up to 2m	Accept slight inaccuracies in drawing provided intention is clear.
9	<p>Award TWO marks for the correct answer of 29.25g</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"> • $6.5 \div 2 = 3.25$ $3 \times 6.5 = 20.5$ (<i>error</i>) $3 \times 3.25 = 9.75$ $20.5 + 9.75$ <p>OR</p> <ul style="list-style-type: none"> • $10p + 5p$ weigh $6.5g + 3.25g = 9.75$ 3 of each coin = 9.75×3 	Up to 2m	Answer need not be obtained for the award of ONE mark.
10	<p>Award TWO marks for the correct answer of 25p or £0.25</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"> • Lemons $\pounds 1 \div 5 = 20p$ each Oranges $\pounds 1.80 \div 4 = 45p$ each $45p - 20p$ 	Up to 2m	Answer need not be obtained for the award of ONE mark.

Qu.	Requirement	Mark	Additional guidance
11	<p>Award TWO marks for four boxes completed correctly, as shown.</p> $ \begin{array}{r} \boxed{5} \ \boxed{6} \ \boxed{2} \ \boxed{8} \\ + \boxed{3} \ \boxed{3} \ \boxed{9} \ \boxed{1} \\ \hline \boxed{9} \ \boxed{0} \ \boxed{1} \ \boxed{9} \end{array} $ <p>If the answer is incorrect, award ONE mark for three boxes completed correctly.</p>	Up to 2m	
12	0.993	1m	
13	<p>Award ONE mark for any of the following:</p> $\frac{7}{16} < \frac{6}{12} < \frac{5}{8}$ <p>OR</p> $\frac{7}{16} < \frac{6}{12} < \frac{3}{4}$ <p>OR</p> $\frac{7}{16} < \frac{5}{8} < \frac{3}{4}$ <p>OR</p> $\frac{6}{12} < \frac{5}{8} < \frac{3}{4}$	1m	<p>Accept equivalent fractions correctly ordered, e.g.</p> $\frac{21}{48} < \frac{24}{48} < \frac{30}{48}$ $\frac{21}{48} < \frac{24}{48} < \frac{36}{48}$ $\frac{7}{16} < \frac{10}{16} < \frac{12}{16}$ $\frac{12}{24} < \frac{15}{24} < \frac{18}{24}$

Qu.	Requirement	Mark	Additional guidance
14	<p>Award TWO marks for three numbers correctly placed.</p> <div style="text-align: center;">  </div> <p>If the answer is incorrect award ONE mark for two numbers correctly placed.</p>	Up to 2m	
<p>Question 14 commentary: This question involves multiplying and dividing decimals where the answer has up to two decimal places (6F9).</p>			
15	<p>A quadrilateral with three acute angles, e.g.</p> <div style="text-align: center;">  </div> <p>OR</p> <div style="text-align: center;">  </div> <p>OR</p> <div style="text-align: center;">  </div>	1m	Accept inaccurate drawing provided the intention is clear.

Qu.	Requirement	Mark	Additional guidance
16	<p>Award TWO marks for the correct answer of 96</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"> • $10.5 \times 2 = 21$ $21 + 11 = 32$ 32×3 	Up to 2m	Answer need not be obtained for the award of ONE mark.
17	35%	1m	
18	<p>Award TWO marks for the correct answer of 90g</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"> • $300 \div 400 = \frac{3}{4}$ $\frac{3}{4} \times 120$ 	Up to 2m	Answer need not be obtained for the award of ONE mark.

Qu.	Requirement	Mark	Additional guidance
19	<p>Award THREE marks for the correct answer of 3076 square metres.</p> <p>If the answer is incorrect, award TWO marks for:</p> <ul style="list-style-type: none"> sight of 9184 as evidence of the multiplication for the first step completed correctly <p>OR</p> <ul style="list-style-type: none"> evidence of an appropriate method which contains no more than ONE arithmetical error, e.g. $\begin{array}{r} 112 \\ \times 82 \\ \hline 8960 \\ 224 \\ \hline 9187 \text{ (error)} \\ 9187 \\ - 6108 \\ \hline 3079 \end{array}$ <ul style="list-style-type: none"> Award ONE mark for evidence of an appropriate method which contains more than ONE arithmetical error. 	Up to 3m	<p>Do not award any marks if the error is in the place value of the multiplication, e.g. the omission of the final zero when multiplying by tens, e.g.</p> $\begin{array}{r} 112 \\ \times 82 \\ \hline 896 \\ 224 \\ \hline \text{wrong answer} \end{array}$
<p>Question 19 commentary: As well as a range of 1 mark and 2 mark questions, one of the questions in a suite of tests may now attract three marks. The solution to a 3 mark question may involve more steps or, as in this example, more complex calculations.</p>			
20a	(12, 0)	1m	Accept unambiguous answers written on the diagram.
20b	(9, -8)	1m	If the answer to 20a is (9, -8) AND the answer to 20b is (12, 0) then award ONE mark for 20b.