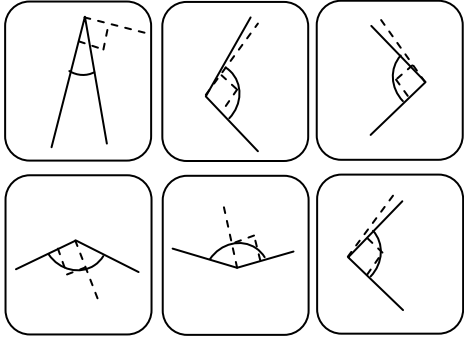
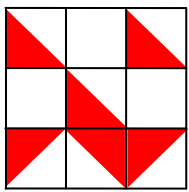
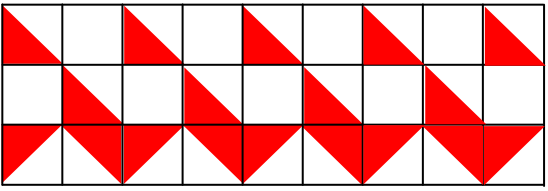
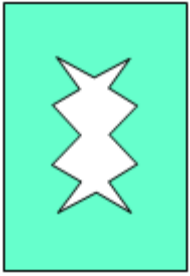
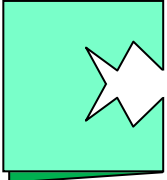
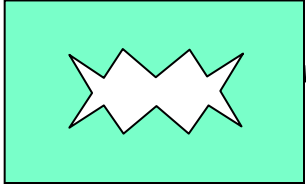
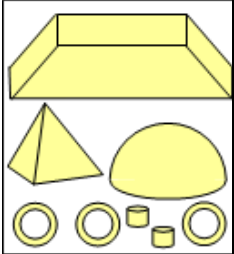
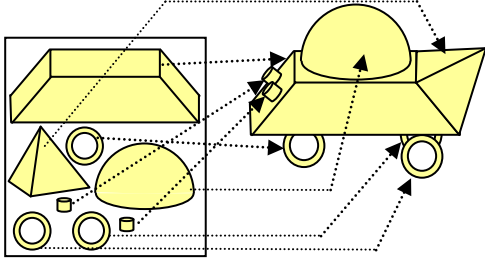
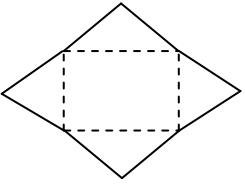
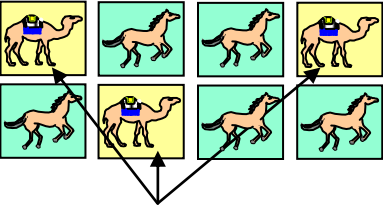
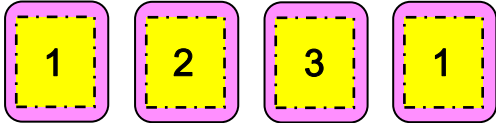


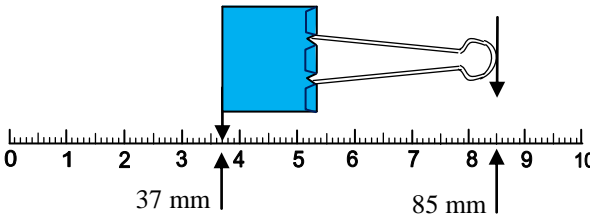
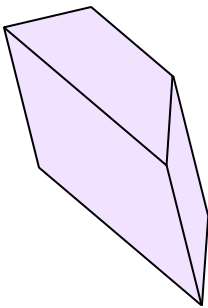
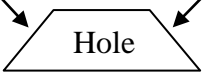
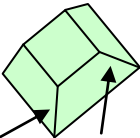
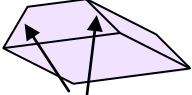
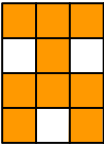
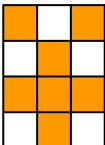

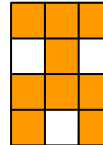
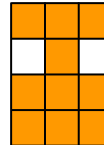
YEAR 5 – PAPER 5  
NUMERACY WORKED SOLUTIONS

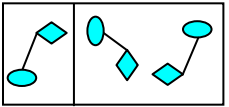
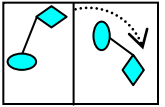
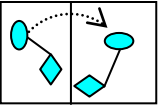
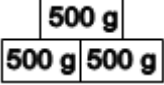
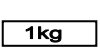

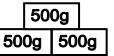
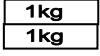
ANSWER	EXPLANATION	AUSTRALIAN CURRICULUM REFERENCE A student can:
1  3	 <p>By constructing a right angle at each vertex, it can be seen if an angle is more or less than <math>90^\circ</math>. There are 3 angles which are more than <math>90^\circ</math>, meaning that there are 3 obtuse angles.</p>	<p>compare angles and classify them as equal to, greater than or less than a right angle. <a href="#">(ACMMG089)</a></p>
2  6 faces and 10 edges	<p>This block is a pentagonal pyramid because its base has 5 edges. Each base edge has a triangular face attached to it. The block has 5 triangular faces and 1 pentagonal face, making a total of 6 faces. From each corner on the base there is an edge connected to the apex. There are 5 edges on the base and another 5 to the apex, giving a total of 10 edges.</p>	<p>construct simple prisms and pyramids. <a href="#">(ACMMG140)</a></p>
3	  <p>The first of the four choices can be used to complete this pattern.</p>	<p>investigate and describe patterns with objects. <a href="#">(ACMNA018)</a></p>

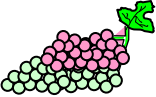
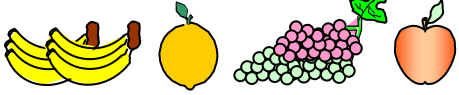
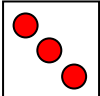
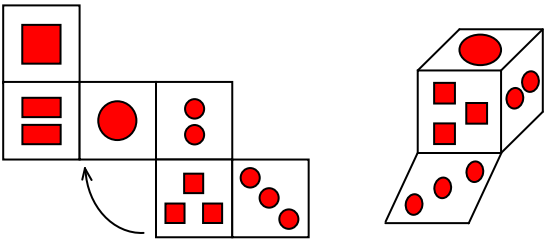
4		 <p>When unfolded, Mona's piece of paper will look like this.</p> 	<p>describe reflections of two-dimensional shapes. Identify line symmetries.  <a href="#">(ACMMG114)</a></p>
5		 <p>The first set of blocks is the correct group. The arrows show where each piece is used in Clark's vehicle.</p>	<p>connect three-dimensional objects with their nets and other two-dimensional representations.  <a href="#">(ACMMG111)</a></p>
6	<p>four triangles and one rectangle</p>	<p>The net of a rectangular pyramid is shown. It has four triangles and one rectangle.</p> 	<p>connect three-dimensional objects with their nets and other two-dimensional representations.  <a href="#">(ACMMG111)</a></p>
7	<p>five thousand and seventy dollars.</p>	<p>The price is written as \$5 070.  This has 5 in the thousands column, 0 in the hundreds column, 7 in the tens column and 0 in the units column.  So there are five thousand and seventy dollars.</p>	<p>recognise, represent and order numbers to at least tens of thousands.  <a href="#">(ACMNA072)</a></p>

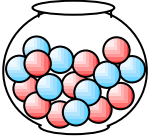
8	$\frac{3}{8}$	 <p style="text-align: center;">3 Camels</p> <p>There are 3 camels out of a total of 8 squares. As a fraction this is <math>\frac{3}{8}</math>.</p>	<p>find a simple fraction of a quantity where the result is a whole number.  <a href="#">(ACMNA127)</a></p>
9	\$3.90	<p>To find the difference, subtract the small jar's cost from the large jar's cost.</p> $\begin{array}{r} \$ 10.40 - \\ \$ 6.50 \\ \hline \$ 3.90 \end{array}$	<p>solve problems involving purchases and the calculation of change to the nearest five cents.  <a href="#">(ACMNA080)</a></p>
10	$\$600 + \$800 + \$300$	<p>\$595 is almost \$600, \$804 is almost \$800 and \$302 is almost \$300. So the best estimate for the total cost is <math>\\$600 + \\$800 + \\$300</math>.</p>	<p>use estimation and rounding to check the reasonableness of answers to calculations.  <a href="#">(ACMNA099)</a></p>
11	Monday	<p>As today is Wednesday the 15<sup>th</sup> of July, in 7 days it will be Wednesday 22<sup>nd</sup> of July. The next Wednesday is the 29<sup>th</sup> of July. There are 31 days in July, so the 30<sup>th</sup> is Thursday, 31<sup>st</sup> is Friday, 1<sup>st</sup> August is Saturday, 2<sup>nd</sup> August is Sunday and 3<sup>rd</sup> August is Monday.</p>	<p>solve simple time problems.  <a href="#">(ACMMG086)</a></p>
12	11	<p>Patricia will use <math>4 \times 8 = 32</math> beads to make 4 necklaces. There are 43 beads in the bowl, so after Patricia makes the necklaces there will be <math>43 - 32 = 11</math> beads left over.</p>	<p>select and apply efficient mental and written strategies to solve problems involving all four operations with whole numbers.  <a href="#">(ACMNA123)</a></p>

13	22	 <p>It would be impossible for Margaret to make 22 as there is only one card with a 2 written on it.</p>	<p>describe possible everyday events and order their chances of occurring. (<a href="#">ACMSP092</a>)</p>
14	5	<p>1 litre is the same as 1000 mL. Each cup holds 200 mL. As <math>1000 \div 200 = 5</math>, so 5 cups can be filled.</p>	<p>develop efficient mental and written for multiplication and for division where there is no remainder. (<a href="#">ACMNA076</a>)</p>
15	Volume.	<p>The second tank is shorter than the tanks either side of it, so they are not organised by height. The width of second tank is less the width of the third tanks, so they are not organised by width. The second tank is longer than the tanks either side of it, so they are not organised by length. The volume of the tanks decreases from left to right, so they are organised by volume.</p>	<p>solve problems involving the comparison of lengths and areas using appropriate units. (<a href="#">ACMMG137</a>)</p>
16	76 min	<p>The train leaves town at 8:47 and arrives at the museum at 10:03. From 8:47 to 9:00 there are 13 minutes. From 9:00 to 10:00 there are 60 minutes. From 10:00 to 10:03 there are 3 minutes. So it takes <math>13 + 60 + 3 = 76</math> minutes to the museum from town.</p>	<p>interpret and use timetables. (<a href="#">ACMMG139</a>)</p>

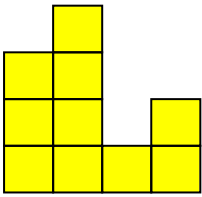
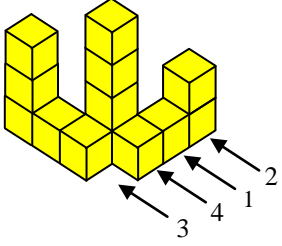

17	48 mm	 <p>The paperclip begins at 37 mm and ends at 85 mm. <math>85 - 37 = 48</math>. The paper clip is 48 mm long.</p>	<p>use scaled instruments to measure and compare lengths. <a href="#">(ACMMG084)</a></p>
18		<p>The hole is in this shape</p>  <p>These 2 sides are</p> <p>Only these two solids can possibly fit in it.</p>  <p>These 2 sides are not equal.</p>  <p>These 2 sides are equal. So this is the solid that can exactly fit to completely fill the hole.</p>	<p>connect three-dimensional objects with their nets and other two-dimensional representations. <a href="#">(ACMMG111)</a></p>
19		<p>Three quarters of the rectangle is shaded, This is the same 3 out of its 4 rows shaded. Or 9 squares shaded.</p>  <p>7 shaded</p>  <p>8 shaded</p>  <p>9 shaded</p>  <p>10 shaded</p> <p>So, this is the required rectangle.</p>	<p>find a simple fraction of a quantity where the result is a whole number. <a href="#">(ACMNA127)</a></p>

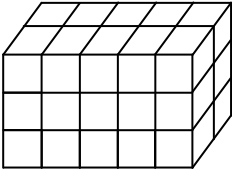

20		 <p>The 1<sup>st</sup> rotation looks like this.</p>  <p>The 2<sup>nd</sup> rotation looks like this.</p>	<p>describe rotations of two-dimensional shapes. Identify rotational symmetries.  <a href="#">(ACMMG114)</a></p>
21	97 km	<p>From Simon's current position the distance to Rosegrove is 235 km.          From Simon's current position the distance to Hillview is 138 km.          So the distance from Hillview to Rosegrove is <math>235 - 138 = 97</math> km.</p>	<p>use efficient mental and written strategies to solve problems.  <a href="#">(ACMNA291)</a></p>
22		<p>The diagram shows that 2 cans weigh 3 kg so each can weigh <math>3 \div 2 = 1.5</math> kg.          Ann must add 1.5 kg to balance the scale.          The total weight of each set of weights is written below them.</p> <div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;">  1 kg         </div> <div style="text-align: center;">  1.2 kg         </div> <div style="text-align: center;">  1.5 kg         </div> <div style="text-align: center;">  2 kg         </div> </div> <p>So Ann should add this.</p>	<p>convert between common metric units of mass.  <a href="#">(ACMMG136)</a></p>
23	3	<p><math>56 \div 8 = 7</math> so <math>4 + \square</math> must also equal 7          Hence <math>\square</math> must represent 3.</p>	<p>develop efficient mental and written strategies for multiplication and for division where there is no remainder  <a href="#">(ACMNA076)</a></p>

24		<p>There are 4 types of fruit in the pattern. The 3<sup>rd</sup> fruit is the grapes, so the 7<sup>th</sup>, 11<sup>th</sup> and 15<sup>th</sup> fruit will also be the grapes.</p> <p><i>Alternatively</i></p> <p>By looking at the 4 different pieces of fruit and continuing to count under them, we can see that the 15<sup>th</sup> fruit is the grapes.</p>  <table style="margin-left: auto; margin-right: auto;"> <tbody> <tr> <td style="padding: 0 10px;">1</td> <td style="padding: 0 10px;">2</td> <td style="padding: 0 10px;">3</td> <td style="padding: 0 10px;">4</td> </tr> <tr> <td style="padding: 0 10px;">5</td> <td style="padding: 0 10px;">6</td> <td style="padding: 0 10px;">7</td> <td style="padding: 0 10px;">8</td> </tr> <tr> <td style="padding: 0 10px;">9</td> <td style="padding: 0 10px;">10</td> <td style="padding: 0 10px;">11</td> <td style="padding: 0 10px;">12</td> </tr> <tr> <td style="padding: 0 10px;">13</td> <td style="padding: 0 10px;">14</td> <td style="padding: 0 10px;">15</td> <td></td> </tr> </tbody> </table>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15		<p>investigate and describe patterns with objects. <a href="#">(ACMNA018)</a></p>
1	2	3	4																
5	6	7	8																
9	10	11	12																
13	14	15																	
25	0.1	<p>It is easier to compare decimals when they each have the same number of decimal places. So to compare these decimals we write each of them with 3 decimal places: 0.010, 0.030, 0.100, 0.005 and 0.040 Only 0.100 is bigger than 0.040</p>	<p>compare, order and represent decimals. <a href="#">(ACMNA105)</a></p>																
26		 <p>When Peter folds the net to make the cube, the 3 squares will be beside the large spot. The face with 3 spots is connected and will eventually be folded under to be on the bottom of the cube.</p>	<p>connect three-dimensional objects with their nets and other two-dimensional representations. <a href="#">(ACMMG111)</a></p>																

27	<p>9 red 8 blue</p> 	<p>There is only one blue marble in Jar 1, so when two marbles are selected, and added to Jar 2, they could be both red or one red and one blue.</p> <p>If they are both red, Jar 2 will contain 10 red and 7 blue marbles, but this is not one of the given answers.</p> <p>If they are one red and one blue, Jar 2 will contain 9 red and 8 blue, which is the 4<sup>th</sup> alternative.</p>	<p>use efficient mental and written strategies to solve problems. <a href="#">(ACMNA291)</a></p>								
28	15	<p>The sector graph is divided into 9 equal sectors. The soccer section has 2 sectors and represents 10 children, so each sector represents 5 children.</p> <p>The skateboarding section has 3 sectors, each sector representing 5 children. <math>3 \times 5 = 15</math>. 15 children skateboard.</p>	<p>construct displays appropriate for data type. <a href="#">(ACMSP119)</a></p>								
29	245 mm	<p>The toy will increase by 45 mm each week for 3 weeks.</p> <p>Its total length will be <math>110 + 45 + 45 + 45</math> which is equal to 245 mm.</p>	<p>use efficient mental and written strategies to solve problems. <a href="#">(ACMNA291)</a></p>								
30	11	<p>The cat costs \$165.</p> <p>Tania has \$55, so she still need <math>\\$165 - \\$55 = \\$110</math>.</p> <p>As she can save \$10 each week, this means she needs <math>110 \div 10 = 11</math> weeks to be able to buy the cat.</p>	<p>develop efficient mental and written strategies for multiplication and for division where there is no remainder. <a href="#">(ACMNA076)</a></p>								
31	6 tens + 4 ones + 8 hundredths	<table border="1" data-bbox="480 1583 967 1661"> <thead> <tr> <th>tens</th> <th>units</th> <th>tenths</th> <th>hundredths</th> </tr> </thead> <tbody> <tr> <td>6</td> <td>4</td> <td>0</td> <td>8</td> </tr> </tbody> </table> <p>The table shows that in the number 64.08 there are 6 tens, 4 units, no tenths and 8 hundredths.</p>	tens	units	tenths	hundredths	6	4	0	8	<p>recognise that the place value system can be extended to tenths and hundredths. <a href="#">(ACMNA079)</a></p>
tens	units	tenths	hundredths								
6	4	0	8								



32		<p>From the right side, the solid will appear as 4 columns of different heights, as shown in this diagram.</p> 	<p>connect three-dimensional objects with their nets and other two-dimensional representations. (<a href="#">ACMMG111</a>)</p>
33	Rectangle	<p>All 4 shapes listed have 4 sides. All but the trapezium have opposite sides equal. The parallelogram has no axes of symmetry. The square has four axes of symmetry. The rectangle has two axes of symmetry. Only the rectangle satisfies all 3 conditions.</p>	<p>recognise and classify familiar two-dimensional shapes using obvious features. (<a href="#">ACMMG022</a>)</p>
34		<p>The area of a rectangle is calculated by multiplying its length by its width.          Rectangle 1: Area = <math>11 \times 5 = 55 \text{ cm}^2</math>          Rectangle 2: Area = <math>10 \times 6 = 60 \text{ cm}^2</math>          Rectangle 3: Area = <math>9 \times 7 = 63 \text{ cm}^2</math>          Rectangle 4: Area = <math>8 \times 8 = 64 \text{ cm}^2</math>          The 1<sup>st</sup> rectangle has the smallest area.</p>	<p>compare objects using familiar metric units of area. (<a href="#">ACMMG290</a>)</p>
35	21.8, 8.6	<p>As the numbers in the pattern are getting smaller, it must be subtraction or division.  <math>18.5 - 15.2 = 3.3</math> and <math>15.2 - 11.9 = 3.3</math>          The 1<sup>st</sup> missing number is <math>18.5 + 3.3 = 21.8</math>          The 2<sup>nd</sup> missing number is <math>11.9 - 3.3 = 8.6</math></p>	<p>describe, continue and create patterns with decimals and whole numbers resulting from addition and subtraction. (<a href="#">ACMNA107</a>)</p>
36	110 km	<p>The map is drawn on a square grid. The distance from Sandy Beach to Treasure Town is 2 squares, so each square is <math>44 \div 2 = 22 \text{ km}</math> long. The distance from the harbour to Treasure Town is 4.5 squares which is <math>22 \times 5 = 112.5 \text{ km}</math>.</p>	<p>use efficient mental and written strategies to solve problems. (<a href="#">ACMNA291</a>)</p>

37	$45\boxed{7} + \boxed{6}4$	$\begin{array}{r} 1 \quad 1 \\ 4 \quad 5 \quad \boxed{7} \\ \boxed{6} \quad 4 \\ \hline 5 \quad 2 \quad 1 \end{array} +$ <p>In the unit column we should add 7 to 4 to get 11, which gives 1 in the answer and 1 on the top of 5.</p> <p>Also, as 1 + 5 is 6 we need to add 6 to get 12, which gives 2 in the answer and 1 on the top of 4.</p> <p>Finally, 1 + 4 gives 5 as shown in the answer.</p>	<p>use efficient mental and written strategies to solve problems.  <a href="#">(ACMNA291)</a></p>
38	30	 <p>Joe can stack his blocks in the box as shown, with 2 rows of 5 along the bottom of the box. He can then stack another 2 more of the same layers. Each layer will have 10 blocks in it, making a total of 30 blocks in the 3 layers.</p>	<p>compare objects using familiar metric units of volume .  <a href="#">(ACMMG290)</a></p>
39		<p>The number made must be odd, so its last digit must be odd. So the last digit must 1 as 4, 6, and 8 are even.</p> <p>To make the smallest number, we must put the remaining digits 4, 6 and 8 from smallest to largest.</p> <p>So the smallest odd number is 4681.</p>	<p>use efficient mental and written strategies to solve problems.  <a href="#">(ACMNA291)</a></p>
40	43	<p>There are 12 lollies in each bag.</p> <p>The bag with 4 honey lollies must contain 8 strawberry lollies.</p> <p>The 5 bags with 5 honey lollies each must contain 7 strawberry lollies.</p> <p>The total number of strawberry lollies will be 8 plus 5 lots of 7, which is <math>8 + 35 = 43</math>.</p>	<p>select and apply efficient mental and written strategies to solve problems involving all four operations with whole numbers.  <a href="#">(ACMNA123)</a></p>