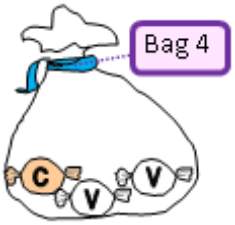
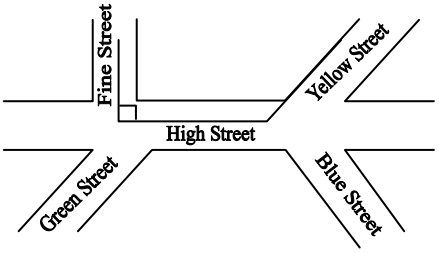
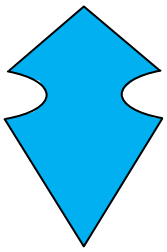
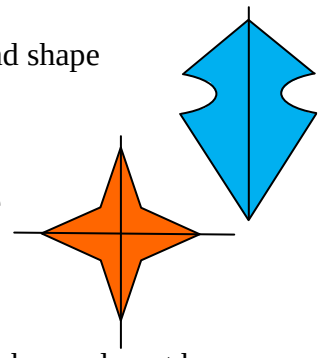
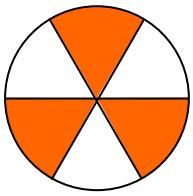
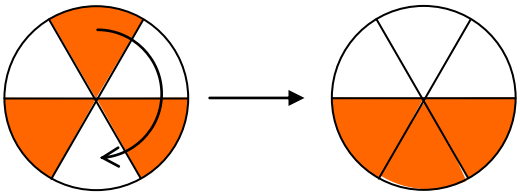
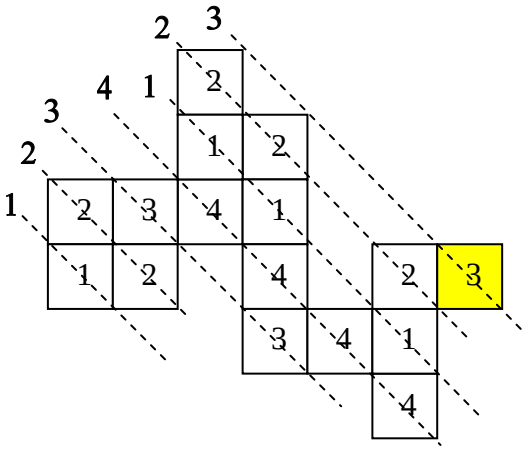
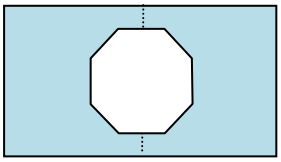
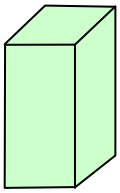
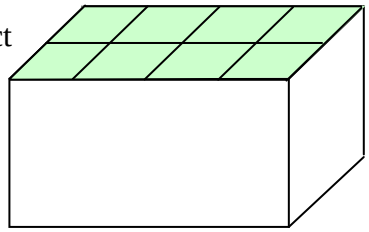
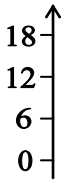
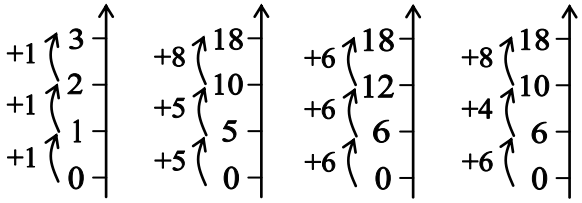
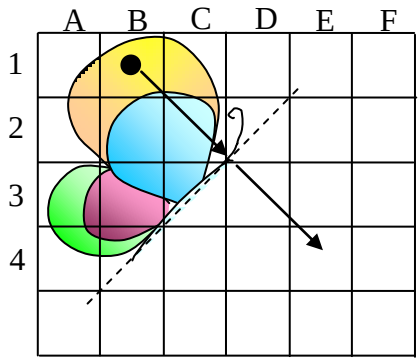
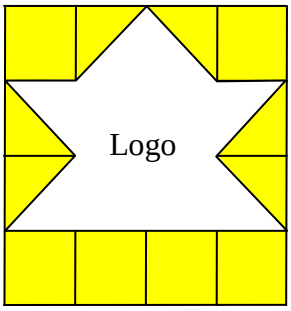
YEAR 5 – PAPER 1

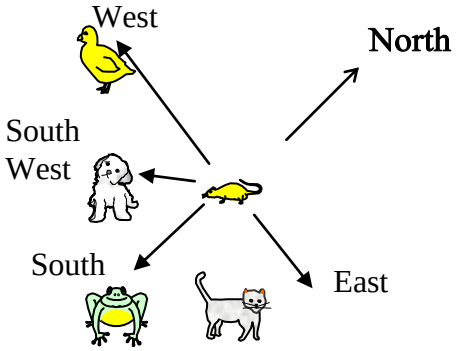
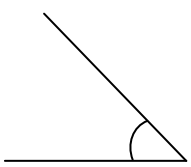
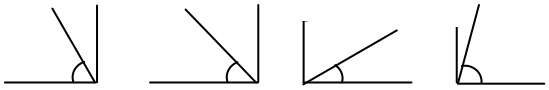
NUMERACY WORKED SOLUTIONS

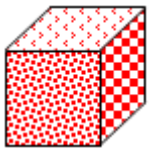
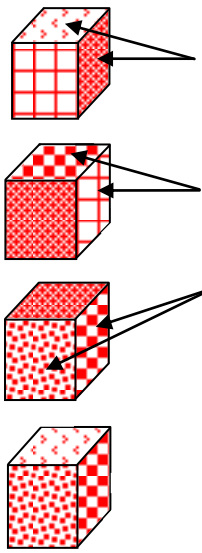
	ANSWER	EXPLANATION	AUSTRALIAN CURRICULUM REFERENCE A student can:
1		Every 4th picture in the pattern is an apple. So the 24th picture will be an apple as 24 can be divided by 4.	develop efficient mental and written strategies for division where there is no remainder. (ACMNA076)
2		In each of the first 3 bags there are an equal number of vanilla and caramel lollies, so the chance of randomly selecting a vanilla lolly is a half. In the 4th bag there are more vanilla than caramel lollies, so the chance is greater than a half. Hence, the 4th bag gives the best chance of selecting a vanilla lolly.	describe possible everyday events and order their chances of occurring. (ACMSP092)
3	Fine Street	As shown, Fine Street makes a right angle with High Street. 	compare angles and classify them as equal to, greater than or less than a right angle. (ACMMG089)
4		Only the second shape has one axis of symmetry. The first shape has 2 axes of symmetry.  The other two shapes do not have any axes of symmetry.	identify line and rotational symmetries. (ACMMG114)

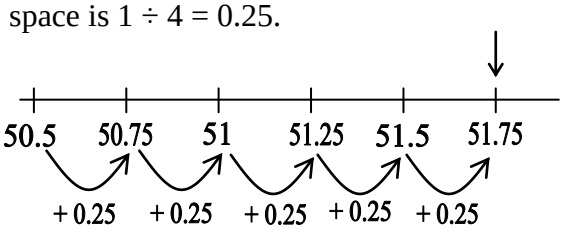
5	÷	Only the symbol " ÷" makes the number sentence correct, as shown below. 120 × 20 = 2400 120 ÷ 20 = 6 120 + 20 = 140 120 – 20 = 100	select and apply efficient mental and written strategies to solve problems involving all four operations with whole numbers. (ACMNA123)
6		It can be seen that if we moved the top piece as shown, the bottom half of the circle will be shaded. 	investigate equivalent fractions used in contexts. (ACMNA077)
7	3	 The diagonal lines numbered 1, 2, 3, and 4, which are repeating, show the pattern. Hence, the missing number in the shaded square is 3.	describe the rule used to create the sequence. (ACMNA133)
8	Tim	Tim has the smallest handspan, as he needed more handspans than the other three to cover the same distance.	describe and interpret different data sets in context. (ACMSP120)
9	Octagon	When unfolded, the paper shows this 8 sided figure, which is an octagon. 	identify line and rotational symmetries. (ACMMG114)

10		Only the 2nd object can fill the box without leaving gaps or spaces. So, Kevin used this object, as shown. 	compare objects using familiar metric units of area and volume. (ACMMG290)
11		The gaps between the numbers on the axis should be evenly spaced and go up to 18. As shown only the 3rd axis does this. 	describe and interpret different data sets in context. (ACMSP120)
12	Class 5D	Reading down the week 3 column, it can be seen that only Class 5D did swimming in week 3.	describe and interpret different data sets in context. (ACMSP120)
13	140 mL	There are 5 intervals between 100 mL and 200 mL. Each interval will be 100 ÷ 5 = 20 mL. The tomato juice is 2 intervals above 100mL which is 40 mL. So, there are 140 mL of tomato juice in the cup.	use scaled instruments to measure and compare capacities. (ACMMG084)
14	E4		create symmetrical patterns, pictures and shapes with and without digital technologies. (ACMMG091)

15	Add 1 to the previous number then divide by 2.	By trying each of the rules it can be seen that only the last will work. 15 + 1 = 16 , 16 ÷ 2 = 8, 8 + 1 = 9 and 9 ÷ 2 = 4.5	describe the rule used to create the sequence. (ACMNA133)
16	10 corners and 7 faces	This pentagonal prism has 5 corners on the front pentagon and another 5 corners on the back pentagon, which makes a total of 10 corners. It has 2 pentagonal faces and 5 rectangular faces, which makes a total of 7 faces.	construct simple prisms and pyramids. (ACMMG140)
17	77 min	The train left the Aquarium at 1:48 pm and arrived in town at 3:05 pm. From 1:48 pm to 2 pm, there are 12 minutes. From 2 pm to 3 pm, there are 60 minutes. From 3 pm to 3:05 pm there are 5 minutes. The total amount of time is 12 + 60 + 5 = 77minutes.	interpret and use timetables. (ACMMG139)
18	35	Since opposite faces make a product of 24, so 2 will be opposite 12, 3 will be opposite 8, and 4 will be opposite 6. Hence, the sum of these 6 numbers is 2 + 12 + 3 + 8 + 4 + 6 = 35	identify and describe factors and multiples of whole numbers and use them to solve problems. (ACMNA098)
19	7 square centimetres	The area of the logo is 4 squares and 6 halves, which make 7 squares.  	calculate the area of rectangles using familiar metric units. (ACMMG109)
20	$14	From the diagram, 5 oranges cost $3.50. Kathy will need 4 of these bags to have a total of 20 oranges. 4 × $3.50 = $14, so Kathy will pay $14.	solve problems involving purchases and the calculation of change to the nearest five cents. (ACMNA080)
21	$2.70	Pile 2 is $1.25 less than pile 1 Pile 3 is $1.25 less than pile 2 so pile 4 must contain $3.95 − $1.25 = $2.70	describe, continue and create patterns with decimals resulting from addition and subtraction. (ACMNA107)

22			describe routes using landmarks and directional language. (ACMMG113)
23	by Membership Date	The data is not ordered by gender as this is shown as Female, Male, Male, Female, Male. It is not ordered by age as this is shown as 27, 28, 23, 25, 35. It is not ordered by number of cars, as this is shown as 1, 2, 3, 2, 3. Only the Membership Date column increases in order.	describe and interpret different data sets in context. (ACMSP120)
24	66 kg.	If Nina's father is about 4 times her weight, he must be approximately 4 × 22 kg = 88 kg. The difference between their weight must be about 88 – 22 = 66kg.	represent and solve problems involving multiplication using efficient mental and written strategies. (ACMNA057)
25	It is less likely her score is 18 than 14.	One girl scored 9, which is less than half of 20, so it is not CERTAIN that she did not fail the test. 2 girls scored 20, so it is NOT impossible that she scored full marks. 2 girls scored 20 and 2 girls scored 18, so it is NOT more likely that her score is 18 than 20. 3 girls scored 14 and 2 scored 18 so it is less likely that her score was 18 than 14.	describe and interpret different data sets in context. (ACMSP120)
26	The second angle is the closest to 45°. 	 By drawing a line perpendicular to the base line in each diagram, it is easier to judge which of the angles is 45° (half of a right angle). Using this method, it can be seen that the second angle is closest to 45°.	estimate and compare angles using degrees. (ACMMG112)

27	9	Last year Peter was a quarter of 32, which is $32 \div 4 = 8$. If Peter was 8 last year, he must be 9 this year.	find a simple fraction of a quantity where the result is a whole number. (ACMNA127)
28	20 times	4cm is equal to 40mm. The real bee is 2mm long. $2mm \times 20 = 40mm$. The drawing is 20 times longer than the real bee.	use simple scales, legends and directions to interpret information contained in basic maps. (ACMMG090)
29		 From the net, these 2 faces should be opposite each other. From the net, these 2 faces should be opposite each other. If these 2 faces are beside each other like this, the 3rd face should be underneath. The first cube is the only one which is correct.	connect three-dimensional objects with their nets and other two-dimensional representations (ACMMG111)
30	6	$\$106.40 - \$34.40 = \$72$ Tom still needs to save \$72. $\$72 \div \$12 = 6$ S0, Tom can buy the skateboard in 6 weeks.	solve problems involving purchases. (ACMNA080)
31	7	$84 \div 6 = 14$ So $2 \times \boxed{?} = 14$ Hence, $\boxed{?} = 7$	develop efficient mental and written strategies for multiplication and for division where there is no remainder. (ACMNA076)

32	4.95 km	The distance Mel ran each day increased by 2.85 – 2.15 = 0.7 km more than the previous day. On Thursday, he would run 3.55 + 0.7 = 4.25 km. On Friday, he would run 4.25 + 0.7 = 4.95 km.	describe, continue and create patterns with fractions, decimals and whole numbers resulting from addition and subtraction. (ACMNA107)
33	51.75	As four spaces equal 51.5 – 50.5 = 1, then one space is 1 ÷ 4 = 0.25.  The arrow is pointing to 51.75, as shown.	compare, order and represent decimals. (ACMNA105)
34	32 cm	If we added 12cm and 5cm to the shorter pieces, all three pieces would be the same length as the longest piece. So 79 + 5 + 12 = 96 cm is the same as 3 times the length of the longest piece. Hence, the longest piece is 96 ÷ 3 = 32cm.	select and apply efficient mental and written strategies to solve problems involving all four operations with whole numbers. (ACMNA123)
35	1500 cm^2	2 tiles are 100 cm long, so each tile is 100 ÷ 2= 50 cm long. 7 tiles are 210 cm wide, so each tile is 210 ÷ 7= 30 cm wide. So one tile has an area of 50 × 30 = 1500 cm^2.	calculate the area of rectangles using familiar metric units. (ACMMG109)
36	39	The six factors of 18 are 1, 2, 3, 6, 9, 18. The sum of these numbers is 1 + 2 + 3 + 6 + 9 + 18 = 39.	identify and describe factors and multiples of whole numbers and use them to solve problems. (ACMNA098)

37	Victor won by 2 votes	After 100 votes were counted, there were 20 votes remaining. As Victor received $\frac{3}{4}$ of these remaining 20 votes, which is 15, then his total number of votes was 46 + 15 = 61. William's total number of votes was 54 + 5 = 59. Hence, Victor won by 2 votes.	find a simple fraction of a quantity where the result is a whole number. (ACMNA127)
38	40 m	By subtracting 20 m, the distances of Angela's and Ben's houses from Caitlin's house will be equal. Each of these distances will be 80 ÷ 2 = 40 m. So, Caitlin's house is 40 m from Angela's house and 40 + 20 = 60 m from Ben's house.	select and apply efficient mental and written strategies to solve problems involving all four operations with whole numbers. (ACMNA123)
39	2951	The pattern is formed by subtracting 13 from a term to create the next term. 3029 3016 3003 2990 2977 2964 2951 -13 -13 -13 -13 -13 -13 As shown, 2951 is the closest to 2955.	use efficient mental and written strategies to solve problems. (ACMNA291)
40	70 mL	The total amount of juice in the two cups was originally 185 + 275 = 460 mL. The total amount of juice in the two cups after the spillage is 145 + 245 = 390 mL. The amount spilt would be 460 – 390 = 70 mL.	use efficient mental and written strategies to solve problems. (ACMNA291)