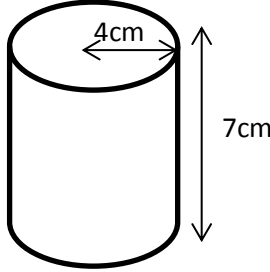
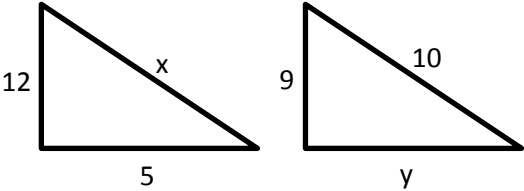
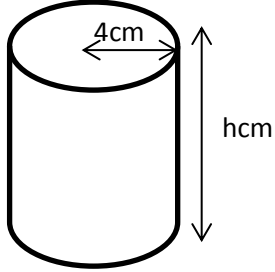
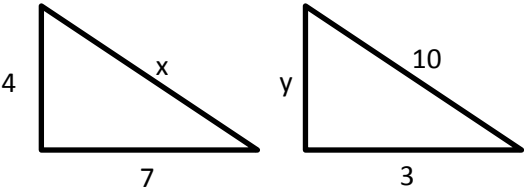


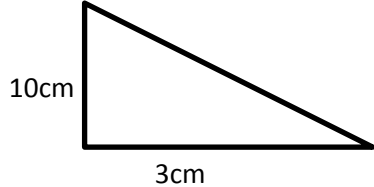
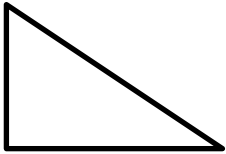
Level 7: core skill sheet 1

Section A: Numbers							14. Find the volume of this cylinder									
1. x and y are in direct proportion. Complete the table:	x	y	9. An integer n satisfies $-3 < n \leq 2$. List all possible values of n .													
	4	11														
	8															
Section B: Calculating			10i Evaluate $4x^2 + 3$ when $x = -2$													
2i What percentage increase is $1.3 \times \text{£}200$ equivalent to?			10ii make x the subject: $3x + b = q$													
2ii A car costs $\text{£}2875$ after a 15% increase. What was it worth originally?			11. Find the n th term of the quadratic sequence: 2, 5, 10, 17, ...													
3. Estimate $603 \div 0.3$			12. Complete the table of values for $y = x^2 + 7$													
4i $2\frac{1}{3} + 4\frac{1}{4}$			x	-2	-1	0	1	2	3	17. A fence has a length of 3m to the nearest metre. What is the maximum length of 10 fences?						
			y		8				16							
4ii Find the area of a rectangle with dimensions $1\frac{2}{3} \text{ cm}$ and $2\frac{1}{3} \text{ cm}$							18. A car travels at 40mph. How far would it travel between 09.55 and 11.10									
5. Estimate $\frac{3.1+5.9^2}{0.24}$			Section D: Shape and Space				Section E: Handling Data									
Section C: Algebra			13. Find the missing sides				20. Estimate the mean									
6i Solve $5x - 2 = 11 - 3x$							<table border="1"> <thead> <tr> <th><i>height</i></th> <th><i>frequency</i></th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 5$</td> <td>3</td> </tr> <tr> <td>$5 \leq h < 10$</td> <td>2</td> </tr> <tr> <td>$10 \leq h < 15$</td> <td>5</td> </tr> </tbody> </table>		<i>height</i>	<i>frequency</i>	$0 \leq h < 5$	3	$5 \leq h < 10$	2	$10 \leq h < 15$	5
<i>height</i>	<i>frequency</i>															
$0 \leq h < 5$	3															
$5 \leq h < 10$	2															
$10 \leq h < 15$	5															
6ii Solve $\frac{5}{3x} = 7$																
7i Expand $(x + 4)(x + 2)$																
7ii Expand $(x + 2)^2$																
8 Solve the simultaneous equations: $4x - 2y = 18$ $3x + y = 16$																

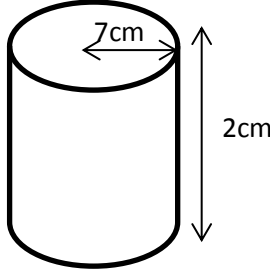
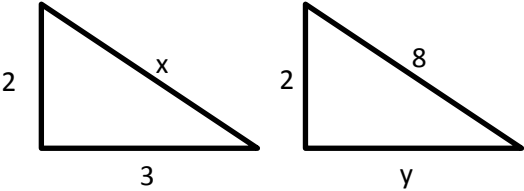
Level 7: core skills sheet 2

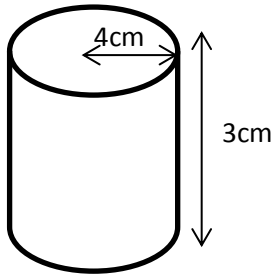
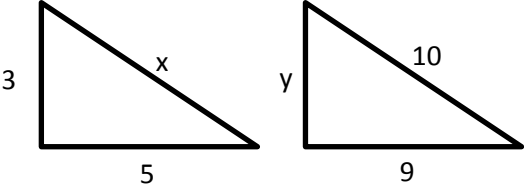
Section A: Numbers							14. This cylinder has a volume of 80cm^2 Find its height									
1. x and y are in direct proportion. Complete the table:	x	y	9. An integer n satisfies $-3 < 2n \leq 8$ List all possible values of n .													
	3	1.5														
	9															
Section B: Calculating			10i Evaluate $5 - x^3$ when $x = -3$													
2i What percentage decrease is $0.7 \times \text{£}180$ equivalent to?			10ii make x the subject: $q = \frac{x}{t}$													
2ii An antique costs $\text{£}262.40$ after a 18% decrease. What was it worth originally?			11. Find the n th term of the sequence: 3, 6, 11, 18, ...													
3. Estimate $3.2 \times (-4.9)^2$			12. Complete the table of values for $y = x^2 - x$				17. What is the maximum area of a square with dimension 4cm to the nearest cm									
4i $4\frac{1}{2} - 2\frac{1}{3}$			x	-2	-1	0	1	2	3	18. Sam walks 2km in 20 mins . What is his average speed in km/h						
			y		2				6							
4ii Find the length of a rectangle has an area of $7\frac{1}{3}\text{cm}^2$ and a width of $\frac{3}{5}\text{cm}$																
5. Estimate $\frac{2.09+33.7}{0.09}$			Section D: Shape and Space				Section E: Handling Data									
Section C: Algebra			13. Find the missing sides				20. Estimate the mean									
6i Solve $11(2 + x) = 3(4 - 3x)$							<table border="1"> <thead> <tr> <th>height</th> <th>frequency</th> </tr> </thead> <tbody> <tr> <td>$2 \leq h < 5$</td> <td>5</td> </tr> <tr> <td>$5 \leq h < 10$</td> <td>7</td> </tr> <tr> <td>$10 \leq h < 20$</td> <td>3</td> </tr> </tbody> </table>		height	frequency	$2 \leq h < 5$	5	$5 \leq h < 10$	7	$10 \leq h < 20$	3
height	frequency															
$2 \leq h < 5$	5															
$5 \leq h < 10$	7															
$10 \leq h < 20$	3															
6ii Solve $\frac{3x+2}{2} - \frac{1}{3} = \frac{5}{6}$																
7i Expand $(x + 7)(x - 4)$																
7ii Expand $(x - 7)^2$																
8 Solve the simultaneous equations: $5x + 2y = 16$ $2x + y = 7$																

Level 7: core skill sheet 3

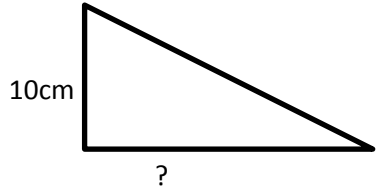
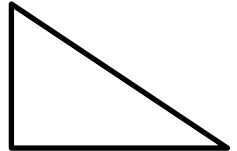
Section A: Numbers				14. Below is the cross-section of a right-angled triangular prism which has a length of 7cm. Find its volume.															
1. What is a 10% increase followed by a 10% decrease equivalent to?		9. Solve, $5 + 3x > 11$																	
Section B: Calculating		10i Evaluate xy^2 when $x = 2, y = 4$																	
2i What percentage increase is $1.03^2 \times \text{£}300$ equivalent to?		10ii make x the subject: $x^2 = q$																	
2ii Simon invests money at 5% for two years and has £1653.75. How much did he have originally		11. Find the nth term of the sequence: 4, 4.5, 5, 5.5, 6, ...																	
3. Estimate 327×0.49		12. Complete the table of values for $y = x^3 - 3$																	
4i $3\frac{2}{7} + 2\frac{1}{5}$		<table border="1" data-bbox="819 735 1417 810"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td></td> <td>-4</td> <td></td> <td></td> <td></td> <td>24</td> </tr> </table>	x	-2	-1	0	1	2	3	y		-4				24		17. One boiled sweet weights 3.2g (1dp). What is the maximum weight of 3 sweets	
x	-2	-1	0	1	2	3													
y		-4				24													
4ii $(4\frac{1}{3})^2$				18. A prism has a volume of 230cm^2 and a density of $3\text{g}/\text{cm}^3$. Find its mass															
5. Estimate $2.3 + 5.9 \times 1.9 - 3.2$		Section D: Shape and Space		Section E: Handling Data															
Section C: Algebra		13. A ladder has a length of 4m and its foot lies 2m from the base of the wall. How high up does the ladder reach? [you may use the diagram to help] 		20. Which class contains the MEDIAN															
6i Solve $\frac{3}{x+2} = 5$				<table border="1" data-bbox="1447 1066 2047 1209"> <thead> <tr> <th>height</th> <th>frequency</th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 5$</td> <td>27</td> </tr> <tr> <td>$5 \leq h < 10$</td> <td>4</td> </tr> <tr> <td>$10 \leq h < 15$</td> <td>22</td> </tr> </tbody> </table>		height	frequency	$0 \leq h < 5$	27	$5 \leq h < 10$	4	$10 \leq h < 15$	22						
height	frequency																		
$0 \leq h < 5$	27																		
$5 \leq h < 10$	4																		
$10 \leq h < 15$	22																		
7i Expand $(x - 4)(x - 3)$																			
7ii Expand $(x + 0.5)^2$																			
8 Solve the simultaneous equations: $y = 3x + 1$ $3x + y = 7$																			

Level 7: core skill sheet 4

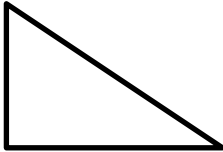
Section A: Numbers						14. Find the volume of this cylinder																		
1. x and y are in direct proportion. Complete the table:	x	y	9. An integer n satisfies $-7 < n \leq -3$. List all possible values of n .																					
	2	7																						
	12																							
Section B: Calculating			10i Evaluate $x^3 + 2$ when $x = -4$																					
2i What percentage decrease is $0.87 \times \text{£}20$ equivalent to?			10ii make x the subject: $5x + a = 11$																					
2ii A TV costs $\text{£}3080$ after a 30% decrease. How much was it originally?			11. Find the n th term of the quadratic sequence: 2, 8, 18, 32, ...																					
3. Estimate $7.1 \div 0.49$			12. Complete the table of values for $y = 5 - x^2$			17. What is the maximum weight of a cat which weighs 3kg to the nearest kg?																		
4i $4\frac{1}{2} + 3\frac{1}{7}$			<table border="1" data-bbox="819 671 1417 743"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td></td> <td>4</td> <td></td> <td></td> <td></td> <td>-4</td> </tr> </table>	x	-2	-1	0	1	2	3	y		4				-4			18. A car travels 7miles in 10 minutes. What is its average speed?				
x	-2	-1	0	1	2	3																		
y		4				-4																		
4ii Find the area of a rectangle with dimensions $3\frac{1}{3} \text{ cm}$ by $2\frac{1}{4} \text{ cm}$			Section D: Shape and Space			Section E: Handling Data																		
5. Estimate 3.1×4.9^2			13. Find the missing sides			20. Estimate the mean																		
Section C: Algebra						<table border="1" data-bbox="1447 978 2047 1126"> <thead> <tr> <th>height</th> <th>frequency</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 2$</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>$2 \leq h < 4$</td> <td>7</td> <td></td> <td></td> </tr> <tr> <td>$4 \leq h < 6$</td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>			height	frequency			$0 \leq h < 2$	2			$2 \leq h < 4$	7			$4 \leq h < 6$	1		
height	frequency																							
$0 \leq h < 2$	2																							
$2 \leq h < 4$	7																							
$4 \leq h < 6$	1																							
6i Solve $7x + 3 = 4x + 11$																								
6ii Solve $\frac{11}{2x} = 4$																								
7i Expand $(x + 7)(x + 3)$																								
7ii Expand $(x + 3)^2$																								
8 Solve the simultaneous equations: $3x + y = 13$ $x - y = 3$																								

Section A: Numbers							14. Find the volume of this cylinder																	
1. x and y are in direct proportion. Complete the table:	x	y	9. An integer n satisfies $-7 < 2n \leq 2$. List all possible values of n .																					
	2	1.2																						
	10																							
Section B: Calculating			10i Evaluate $5 - x^2$ when $x = -4$																					
2i What percentage decrease is $0.04 \times \text{£}219$ equivalent to?			10ii make x the subject: $\frac{x}{4} = b$																					
2ii A person's weight is 104kg after a 30% increase. What did they weigh originally?			11. Find the n th term of the sequence: 0, 1, 4, 9, 16, ...																					
3. Estimate $2.4 \times (9.8)^2$			12. Complete the table of values for $y = 2x^2$				17. What is the minimum crowd at a game when it is given as 18000 to the nearest 1000.																	
4i $3\frac{5}{7} - 2\frac{1}{3}$			<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>18</td> </tr> </table>				x	-2	-1	0	1	2	3	y		2				18	18. Sam runs 7km in 30 mins. What is his average speed in km/h			
x	-2	-1	0	1	2	3																		
y		2				18																		
4ii How far would a person go walking at $3\frac{1}{2}$ miles at $\frac{7}{8}$ mph?																								
5. Estimate $\frac{9.9}{0.24}$			Section D: Shape and Space				Section E: Handling Data																	
Section C: Algebra			13. Find the missing sides				20. Estimate the mean																	
6i Solve $5(3x - 2) = 4x$							<table border="1" style="display: inline-table; vertical-align: middle;"> <thead> <tr> <th>height</th> <th>frequency</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 4$</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>$4 \leq h < 8$</td> <td>2</td> <td></td> <td></td> </tr> <tr> <td>$8 \leq h < 12$</td> <td>1</td> <td></td> <td></td> </tr> </tbody> </table>		height	frequency			$0 \leq h < 4$	2			$4 \leq h < 8$	2			$8 \leq h < 12$	1		
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6ii Solve $\frac{x}{4} + \frac{1}{2} = 3$																								
7i Expand $(x + 4)(x - 2)$																								
7ii Expand $(x - 3)^2$																								
8 Solve the simultaneous equations: $5x + 2y = 36$ $x + y = 9$																								

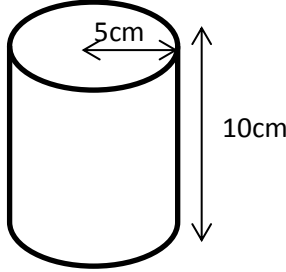
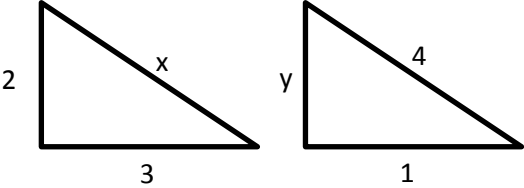
Level 7: assessments sheet 6

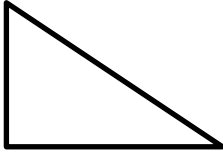
Section A: Numbers																			
1. An £80 antique increases in value by 25% then decreases by 25%. What is its new value?		9. Solve, $\frac{3x}{2} > 5$		14. Below is the cross-section of a right-angled triangular prism which has a volume of 40cm^2 and a depth of 2cm Find the base of the triangle 															
Section B: Calculating		10i Evaluate xy^2 when $x = 60, y = 0.5$																	
2i Increase £421 by 17%		10ii make x the subject: $\sqrt{x} = a$																	
2ii A village's population decreases by $\frac{1}{5}$ and is now 96. What was it originally?		11. Find the nth term of the sequence: 10,8,6,4 ...																	
3. Estimate 122×0.73		12. Complete the table of values for $y = x^3$		17. A truck holds 1500kg to the nearest 100. What is its maximum safe cargo? 18. How far would you go in 15 minutes travelling at 50mph?															
4i $5\frac{1}{2} + 3\frac{3}{5}$		<table border="1" style="display: inline-table;"> <tr> <td>x</td> <td>-2</td> <td>-1</td> <td>0</td> <td>1</td> <td>2</td> <td>3</td> </tr> <tr> <td>y</td> <td></td> <td>-1</td> <td></td> <td></td> <td></td> <td>27</td> </tr> </table>	x			-2	-1	0	1	2	3	y		-1				27	
x	-2	-1	0			1	2	3											
y		-1				27													
4ii $(3\frac{1}{3})^2$																			
5. Estimate $19.8 - 2.1 \times 3.7$		Section D: Shape and Space		Section E: Handling Data															
Section C: Algebra		13. Jack travels 7miles west then 3 miles north. How far is he from his starting point? [you may use the diagram to help]		20. Which class contains the MEDIAN															
6i Solve $5 = \frac{3}{x-2}$				<table border="1" style="display: inline-table;"> <thead> <tr> <th>height</th> <th>frequency</th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 5$</td> <td>13</td> </tr> <tr> <td>$5 \leq h < 10$</td> <td>14</td> </tr> <tr> <td>$10 \leq h < 15$</td> <td>30</td> </tr> </tbody> </table>		height	frequency	$0 \leq h < 5$	13	$5 \leq h < 10$	14	$10 \leq h < 15$	30						
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7i Expand $(x - 7)(x + 2)$																			
7ii Expand $(x + 13)^2$																			
8 Solve the simultaneous equations: $y = x - 1$ $x + y = 9$																			

Level 7: assessments sheet 6

Section A: Numbers				14. A cube has a volume of 24cm^3 . All three sides are whole numbers and different. Find its surface area.													
1. The price of a book is £5. Which is cheaper -Two for the price of one, or buy one get one half-price?		9. Solve, $5 + 3x > -4$															
Section B: Calculating		10i Find x^y when $x = 0.1, y = 2$															
2i What percentage increase does: $\text{£}321 \times 1.7$ represent?		10ii make x the subject: $\frac{ax}{b} + c = d$															
2ii Sam loses half his money and now has £350. What did he have originally?		11. Find the nth term of the sequence: 1, 8, 27, 64, ...															
3. Estimate 41×0.249		12. Complete the table of values for $y = (x - 2)^2$															
4i $3\frac{1}{2} \times \frac{2}{7}$		<table border="1"> <tr> <td>x</td> <td>-1</td> <td>0</td> <td>1</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> </tr> </table>		x	-1	0	1	y				17. A rule measures 30cm to the nearest cm. What is its lowest possible length?					
x	-1	0	1														
y																	
4ii $\frac{3}{5} \div \frac{12}{13}$				18. Paul travels 7miles in 5 minutes. What is his average speed in mph.													
5. Estimate $3.26^2 + 4.1$		Section D: Shape and Space		Section E: Handling Data													
Section C: Algebra		13. This triangle has a base of 4cm. Its height is 1.5 times as large. Find the length of the hypotenuse.		20. find the mean number of siblings													
6i Solve $\frac{5}{x+3} = \frac{3}{x-2}$				<table border="1"> <thead> <tr> <th>height</th> <th>frequency</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>3</td> <td></td> </tr> <tr> <td>1</td> <td>2</td> <td></td> </tr> <tr> <td>2</td> <td>5</td> <td></td> </tr> </tbody> </table>		height	frequency		0	3		1	2		2	5	
height	frequency																
0	3																
1	2																
2	5																
7i Expand $3x(x + 2)$																	
7ii Expand $(x + 12)(x + 3)$																	
8 Solve the simultaneous equations: $x = 7$ $3x + 2y = 25$																	

Level 7: Core Skill Sheet

Section A: Numbers							14. Find the volume of this cylinder																			
1. x and y are in direct proportion. Complete the table:	x	y	9. Write down an inequality to represent all numbers greater than and including 3																							
	3	2																								
	30																									
Section B: Calculating			10i Evaluate $4 + x^2$ when $x = -2$																							
2i What percentage increase is $1.27 \times \text{£}450$ equivalent to?							17. A cat weighs 1kg to the nearest kilogram. What is its minimum possible weight?																			
2ii Sam's £1000 car decreases by 5% per year. What is it worth after two years?			10ii make x the subject: $3x + 2a = 11$				18. Sam runs 3m in 1 second. What is his average speed in metres per minute?																			
3. Estimate $1.9^{2.1}$			11. Find the 5 th term in the sequence: 10^n																							
4i $3\frac{1}{3} + 4\frac{1}{4}$			12. Complete the table of values for $y = 4 - x^2$																							
4ii Find the area of a square with a base of $3\frac{1}{2} \text{ cm}$			x	-2	-1	0	1	2	3																	
5. Estimate $\frac{3.2}{0.49}$			y		3				-5																	
Section C: Algebra			Section D: Shape and Space				Section E: Handling Data																			
6i Solve $5(3x + 1) = 4(5 - 2x)$			13. Find the missing sides				20. Estimate the mean																			
6ii Solve $\frac{x}{4} + \frac{1}{2} = \frac{1}{8}$							<table border="1"> <thead> <tr> <th>height</th> <th>frequency</th> <th></th> <th></th> </tr> </thead> <tbody> <tr> <td>$0 \leq h < 2$</td> <td>1</td> <td></td> <td></td> </tr> <tr> <td>$2 \leq h < 4$</td> <td>7</td> <td></td> <td></td> </tr> <tr> <td>$4 \leq h < 6$</td> <td>2</td> <td></td> <td></td> </tr> </tbody> </table>				height	frequency			$0 \leq h < 2$	1			$2 \leq h < 4$	7			$4 \leq h < 6$	2		
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7i Expand $(x + 2)(x + 7)$																										
7ii Expand $(x + 4)^2$																										
8 Solve the simultaneous equations: $y = x$ $x + y = 12$																										

Section A: Numbers				14. A cuboid has a volume of 81cm^3 . All three sides are integers and different. What must be value of the three sides equal?																
1. The price of a book is £8. You can get 3 for the price of 2 with a 10 discount. How much would 10 books cost?		9. Solve, $3x + 2 \leq 11$																		
Section B: Calculating		10i Find x^y when $x = -4, y = 2$																		
2i What percentage decrease does: $£210 \times 0.85$ represent?		10ii make x the subject: $a(x + b) = 4$																		
2ii Paul spends $\frac{1}{3}$ of his money and now has £26. What did he have originally		11. Find the nth term of the sequence: $1, \frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \dots$																		
3. Estimate 3.21×19.87		12. Complete the table of values for $y = 2x^3$		17. A loaf weighs 300g to he nearest 10g. What is its lowest possible weight?																
4i $\frac{4}{7} \times \frac{2}{5} \times \frac{1}{2}$		<table border="1"> <tr> <td>x</td> <td>-1</td> <td>0</td> <td>1</td> </tr> <tr> <td>y</td> <td></td> <td></td> <td></td> </tr> </table>		x	-1	0	1	y				18. Paul travels 10miles in 5 minutes. What is his approximate average speed in km/hour .								
x	-1	0	1																	
y																				
4ii $\frac{4}{7} \div \frac{8}{21}$																				
5. Estimate $3.2(1.9)^2$		Section D: Shape and Space		Section E: Handling Data																
Section C: Algebra		13. This triangle has a base of 4cm and a height of 7cm. Find the length of its hypotenuse		20. find the mean number of siblings																
6i Solve $\frac{x}{x+2} = \frac{2}{3}$				<table border="1"> <thead> <tr> <th>height</th> <th>frequency</th> <th></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>1</td> <td></td> </tr> <tr> <td>1</td> <td>3</td> <td></td> </tr> <tr> <td>2</td> <td>4</td> <td></td> </tr> <tr> <td>3</td> <td>2</td> <td></td> </tr> </tbody> </table>		height	frequency		0	1		1	3		2	4		3	2	
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7i Expand $5x(2x - 3)$																				
7ii Expand $(x + 4)(x + 3)$																				
8 Solve the simultaneous equations: $x + y = 10$ $x - y = 2$																				

