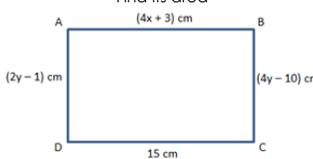
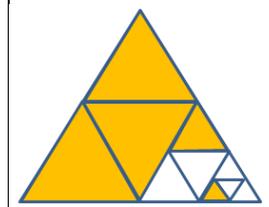
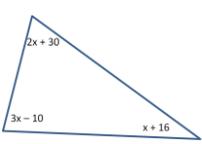
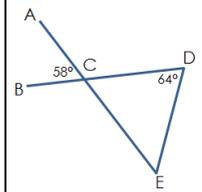
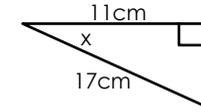
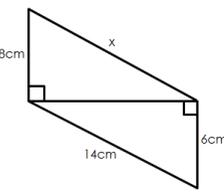


## A BIT OF MATHS EACH DAY – FOUNDATION TIER GCSE – NOVEMBER 2017

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY											
<h1 style="color: red; font-size: 2em; margin: 0;">November</h1>		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>	5 <sup>th</sup>											
		<p>From this list of numbers... 1, 2, 6, 8, 9, 19, 21, 48, 125 Write down...</p> <p>(a) a prime number (b) a cube number (c) a triangular number (d) a square number</p>	<p>ABCD is a rectangle. Find its area</p> 	<p>Find the value of... <math>(3.21 - 0.95)^3 + \sqrt[3]{7.86}</math> Write your answer...</p> <p>(a) as a full calculator display (b) correct to 3 d.p. (c) correct to 3 s.f.</p>	 <p>This is drawn accurately. It is a sequence of equilateral triangles. What fraction is shaded?</p>												
6 <sup>th</sup>	7 <sup>th</sup>	8 <sup>th</sup>	9 <sup>th</sup>	10 <sup>th</sup>	11 <sup>th</sup>	12 <sup>th</sup>											
<p>Solve the equation <math>4(3x + 4) = 3(5x - 2)</math></p>	<p>The total capacity of an oil tank is 8600 litres. The tank should only be filled to 90% if it's total capacity. A pump can deliver oil to the tank at a rate of 740 litres per minute. Calculate the time it would take to fill the empty tank. Give your answer in minutes and seconds.</p>	 <p>Find the size of the largest angle in this triangle.</p>	 <p>AE and BD are straight lines. Show that triangle CDE is an isosceles triangle. Explain each step of your reasoning.</p>	<p>Two jars contain coloured counters. Jar A contains 4 red, 9 blue and 7 white counters. Jar B contains 4 red and 11 white counters. A counter is removed from each jar. What is the probability the counters are the same colour?</p>	<table border="1" style="display: inline-table; margin-right: 20px;"> <thead> <tr> <th>Height, h, cm</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td><math>0 &lt; h \leq 10</math></td> <td>6</td> </tr> <tr> <td><math>10 &lt; h \leq 20</math></td> <td>9</td> </tr> <tr> <td><math>20 &lt; h \leq 30</math></td> <td>18</td> </tr> <tr> <td><math>30 &lt; h \leq 40</math></td> <td>12</td> </tr> <tr> <td><math>40 &lt; h \leq 50</math></td> <td>5</td> </tr> </tbody> </table> <p>The table show the heights of some tomato plants in a greenhouse. Work out</p> <p>(a) the modal group (b) the group the median lies in (c) an estimate for the mean.</p>	Height, h, cm	Frequency	$0 < h \leq 10$	6	$10 < h \leq 20$	9	$20 < h \leq 30$	18	$30 < h \leq 40$	12	$40 < h \leq 50$	5
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<p>Paint is sold in three different sized cans. A 2 litre tin costs £1.44 A 2.5 litre tin costs £1.65 A 5 litre tin costs £3.40. Which is the better value for money? You must explain your reasoning carefully.</p>	<p>Make m the subject in the following formula...</p> $r = \frac{m}{n} - ts$	<p>Wayne, Dawn and Rachael shared some sweets in the ratio 3 : 5 : 10 Rachael got 28 more sweets than Wayne. How many sweets did they share in total?</p>	<p>Three companies sell the same type of furniture. The price of the furniture from Pooles of London is £1480 The price of the furniture from Jardins of Paris is €1980 The price of the furniture from Outways of New York is \$2250 The exchange rates are £1 = €1.34      £1 = \$1.52 Which company sells this furniture at the lowest price? You must show how you get your answer.</p>	<p>Find the size of angle x.</p> 	<p>Gary's motorbike uses petrol. Gary needs to mix oil with the petrol. He mixes oil and petrol in the ratio 1 : 14 by volume. Gary is going to ride his motorbike 3000 miles. Each 20 miles he rides uses 1litre of the oil and petrol mixture. A 500 ml bottle of oil costs £3.99. Work out the total cost of the bottles of oil Gary needs to buy. (1litre = 1000 ml) You must show all your working.</p>												
20 <sup>th</sup>	21 <sup>st</sup>	22 <sup>nd</sup>	23 <sup>rd</sup>	24 <sup>th</sup>	25 <sup>th</sup>	26 <sup>th</sup>											
 <p>How many sides does this regular polygon have?</p>	<p>Work out the answer to the following WITHOUT using a calculator...</p> <p>(a) <math>1\frac{1}{3} + 2\frac{3}{5}</math> (b) <math>4\frac{1}{2} \times 3\frac{4}{7}</math></p>	<p>Factorise the following expressions...</p> <p>(a) <math>12x^3 - 8x</math> (b) <math>x^2 + 3x - 40</math></p>	 <p>Find the value of x correct to 2 dp</p>	<p>Solve the equation <math>\frac{2x - 3}{5} + \frac{3x}{4} = 3</math></p>	<p>Susie has to deliver some packages and some parcels. The total number of packages is 4 times the number of parcels. The total number of packages and parcels is 40 Each parcel has a weight of 1.5kg. The total weight of the packages and parcels is 37.6 kg. Each of the packages has the same weight. Work out the weight of each package.</p>												
27 <sup>th</sup>	28 <sup>th</sup>	29 <sup>th</sup>	30 <sup>th</sup>														
<p>Look at this sequence. 7, 16, 25, 34, 43, 52, ... (a) Write down the nth term for the sequence. (b) Does 241 lie in the sequence? You must explain your reasoning.</p>	<p>Wayne plays cricket. When batting, after 10 innings, his average score is 17.3. He scores 42 in his 11<sup>th</sup> innings. After 12 innings his average is 21. How many runs did he score in his 12<sup>th</sup> innings?</p>	<p>Simplify the following expressions fully...</p> <p>(a) <math>5(2x + 5) - 2(2x - 3)</math> (b) <math>(x + 9)(x - 5)</math> (c) <math>\frac{m^3 \times m^7}{m^{12}}</math></p>	<p>Write</p> <p>(a) <math>\frac{3}{16}</math> as a decimal (b) 0.35 as a fraction in its simplest form.</p>	<p>The best way to learn mathematics is to DO mathematics. If you do something regularly on a daily basis you will make a bigger difference than leaving it till just before your exams. If you need help there are some fantastic videos at <a href="http://www.corbettmaths.com">www.corbettmaths.com</a> Or you can always tweet me @mrchadburn</p>													