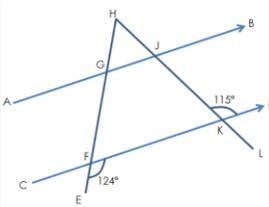
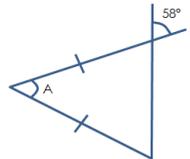
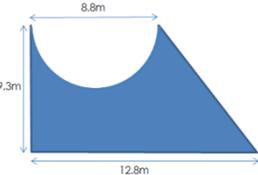
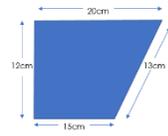
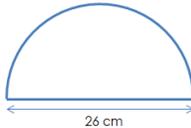
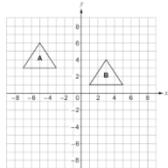


A BIT OF MATHS EACH DAY – FOUNDATION TIER – OCTOBER 2018

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY	SUNDAY																					
1st	2nd	3rd	4th	5th	6th	7th																					
(a) Simplify the expressions (i) $2a + 3b + 5a - 4b$ (ii) $3a^2 \times 5a \times 2b$ (b) Expand $3(4x - 9)$ (c) If $a = 4$ and $b = 5$ evaluate $12 - ab$	(a) Find 4^4 (b) Find $9 + 5 \times 2^2$ (c) I am thinking of a number. It is a factor of 36 and a multiple of 9 but it is not a square number. What number am I thinking of?	(a) Work out the reciprocal of 0.875 (b) Calculate the following $\sqrt{78 + 5.6^2}$ 5.2×1.5^2 Giving your answer correct to: (i) 3 d.p. (ii) 3 s.f.	WITHOUT USING A CALCULATOR , showing a clear method, evaluate: (a) 85.2×0.34 (b) $10284.12 \div 1.2$	(a) Frank gets an 8% wage increase. He was earning £280 per week. What will he earn after the increase? (b) A shirt is priced at £40. It is decreased in a sale by 10% and then after the sale increased in price by 10%. What is its final selling price?		AGJB, CFKD, EFGH and LKJH are straight lines. AGJB and CFKD are parallel to each other. Angle DKJ = 115° and angle EFK = 124° . Giving correct geometrical reasons for each stage of your working, find the size of angles (a) FGJ (b) GHJ																					
8th	9th	10th	11th	12th	13th	14th																					
WITHOUT USING A CALCULATOR , showing a clear method, evaluate: (a) $\frac{2}{3} - \frac{2}{5}$ (b) $5 \times \frac{5}{7}$ (c) $\frac{2}{3} \div \frac{2}{9}$	Here are some test scores for 10 students who sat a mathematics exam 31, 55, 29, 81, 52, 18, 44, 31, 52, 78 (a) What is the modal score? (b) What is the median score? (c) What is the range of the scores? (d) What is the mean score?	Solve the following equations (a) $\frac{x}{6} - 1 = 11$ (b) $7(2x + 9) = 35$ (c) $6x - 5 = 9x + 13$	A bicycle has wheels which have a diameter of 62cm. Paul cycles to school, a distance of 4.2km. How many complete rotations does each wheel make on his journey to school?	A rectangle has an area of 72cm^2 . Its perimeter is 36cm. Its length and width are both integers. What is its length and width?	<table border="1" style="margin: auto;"> <thead> <tr> <th>Team</th> <th>Frequency</th> <th>Angle</th> </tr> </thead> <tbody> <tr> <td>Liverpool</td> <td>5</td> <td>30°</td> </tr> <tr> <td>Manchester Utd</td> <td></td> <td></td> </tr> <tr> <td>Rotherham Utd</td> <td>3</td> <td></td> </tr> <tr> <td>Sheffield United</td> <td>20</td> <td></td> </tr> <tr> <td>Sheffield Weds.</td> <td></td> <td>96°</td> </tr> <tr> <td>No Team</td> <td></td> <td>66°</td> </tr> </tbody> </table>	Team	Frequency	Angle	Liverpool	5	30°	Manchester Utd			Rotherham Utd	3		Sheffield United	20		Sheffield Weds.		96°	No Team		66°	A survey is conducted on the favourite football team of some students. A pie chart is to be drawn.
Team	Frequency	Angle																									
Liverpool	5	30°																									
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15th	16th	17th	18th	19th	20th	21st																					
Four numbers have a mean of 8, a median of 8 and a range of 6. There is no mode. What could the four numbers be?	(a) Paul produces this working when solving an equation $8(2x + 3) = 28$ $16x + 24 = 28$ $16x = 4$ $x = 4$ Paul has made a mistake. What mistake has he made? (b) Solve the equation $4(2x - 1) + 2(3x + 5) = 2(2x - 7)$	Giving correct geometrical reasons for each stage of your working, find the size of angle A. 	(a) Solve the inequality $3x + 7 > 1$ (b) Solve the inequality $-9 \leq 2x - 1 < 7$ (c) Which integer values satisfy BOTH inequalities in parts (a) and (b)?	200 year 11 students choose one of four options for an enrichment afternoon. $\frac{3}{8}$ of them choose swimming, 15% choose football. The remaining students choose between Ice Skating and bowling in the ratio 11:8. How many choose each option?	The diagram shows the plan of a garden. The shaded area is to have a wooden border placed around it and is to be gravelled. The border is sold in 2m strips costing £4.45 each and the gravel is sold in bags which cover 5m^2 costing £11.85 each. How much will it cost to place a border around and gravel the garden? 																						
22nd	23rd	24th	25th	26th	27th	28th																					
(a) Write 8940000 as a number in standard form (b) Write 9.12×10^{-3} as a normal number. (c) Calculate $4.992 \times 10^{-3} \div 3.12 \times 10^{-6}$. Give your final answer in standard form.	 <p>Find the area AND perimeter of this trapezium.</p>	There are 850 coins in a jar. 24% of them are 20p coins. $\frac{4}{25}$ of the coins are 50p coins. The remaining coins are £1 and £2 coins in the ratio 10 : 7. What is the total value of the coins in the jar?	Paula is preparing food for a party. She buys p packs of mini-pies sold in packs of 12, s packs of sandwiches cakes sold in packs of 8 and p packs of mini pizzas sold in packs of 9. (a) Write an expression for the TOTAL number of sausage rolls, bread cakes and pizzas she buys. (b) There will be 20 people at the party. What is the smallest number of each type of pack she must buy so that everyone has at least 2 pies, sandwiches and pizzas?	Arthur is going for a meal. He will have a starter and a main meal. The menu says he can have soup, salad or melon for starter. For main he can have pasta, fish and chips or pie. Write down ALL the possible combinations of starter and main course that Arthur could order.	A survey of shoe sizes was conducted by a group of students. The results are shown in the table. <table border="1" style="margin: auto;"> <thead> <tr> <th>Shoe Size</th> <th>Frequency</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>2</td> </tr> <tr> <td>5</td> <td>8</td> </tr> <tr> <td>6</td> <td>11</td> </tr> <tr> <td>7</td> <td>9</td> </tr> <tr> <td>8</td> <td>6</td> </tr> <tr> <td>9</td> <td>4</td> </tr> </tbody> </table> (a) What is the modal size? (b) What is the range of sizes? (c) What is the median shoe size? (d) What is the mean shoe size?	Shoe Size	Frequency	4	2	5	8	6	11	7	9	8	6	9	4								
Shoe Size	Frequency																										
4	2																										
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29th	30th	31st	<h1 style="color: red; text-align: center;">October Calculator</h1>		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 www.corbettmaths.com Or you can always tweet me @mrchadburn																						
(a) If $3x = 12$ and $5y = 30$ what is the value of $7x - 4y$? (b) Factorise fully $20x - 16y$ (c) Expand and simplify fully $(x + 4)(x + 9)$	 <p>The diagram shows a semi-circle. (a) What is its area? (b) What is its perimeter?</p>	(a) Describe the single transformation that maps shape A onto shape B.  (b) Reflect shape A in the x-axis. Label the shape C. (c) Enlarge shape B with a scale factor of 2 using (4, 0) as a centre.																									