

MATHS PASSPORT



PASSPORT THREE




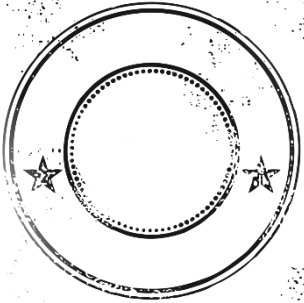
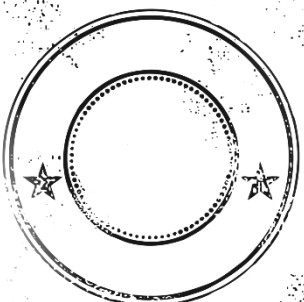





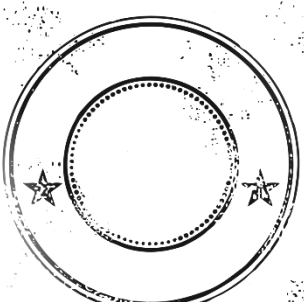







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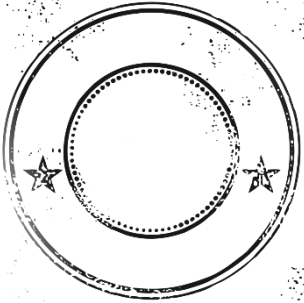
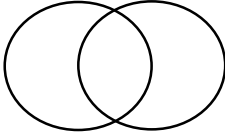


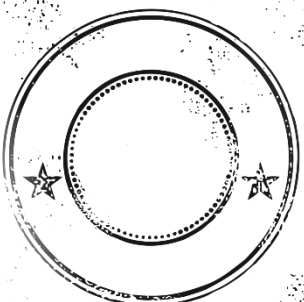


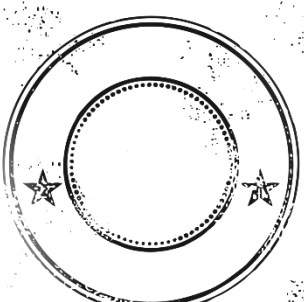
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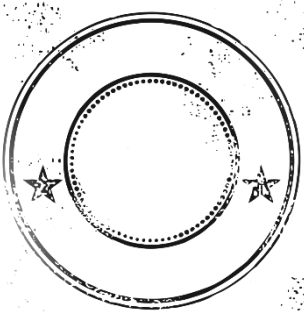


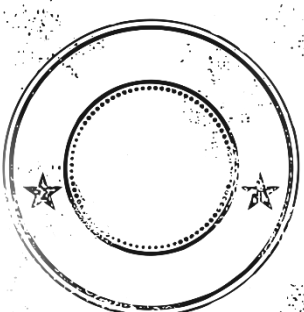


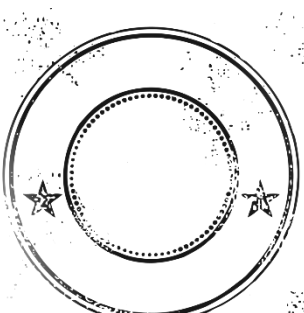
Number

TOPIC	VIDEO	PRACTISE	
<p>Ratio</p> <p>To be able to calculate the quantities when given one value.</p>	 http://goo.gl/nnYzBZ	 http://goo.gl/W4YxCC	
<p>Exam Question</p> <p>Purple paint is made by mixing Red and blue paint together in the ratio 3:4. You have 28l of blue paint, how much red paint do you need to add to make the correct shade of purple?</p>			
<p>Percentage Increase & Decrease</p> <p>To be able to find the percentage increase and decrease of an amount.</p>	 http://goo.gl/nM6RdD	 http://goo.gl/qD3cKD	
<p>Exam Question</p> <p>Miss Gardner owns a maths resource shop. She is having a sale. Which calculator is the cheapest.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p>15% off Was: £8.80 Now:</p> </div> <div style="text-align: center;">  <p>26% off Was: £9.90 Now:</p> </div> </div>			
<p>Best Buy</p> <p>To be able to solve functional problems involving money.</p>	 http://bit.ly/1UJIDR7	 http://goo.gl/SgtxVJ	
<p>Exam Question</p> <p>Five doughnuts cost £3.35 and two doughnuts cost £1.38. Which quantity is cheaper to buy?</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>			




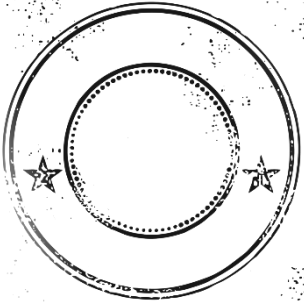
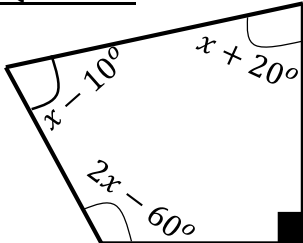


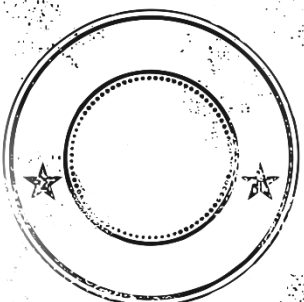
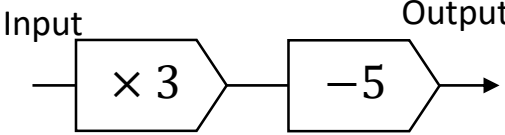


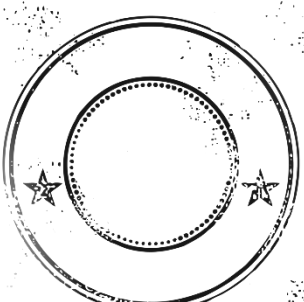
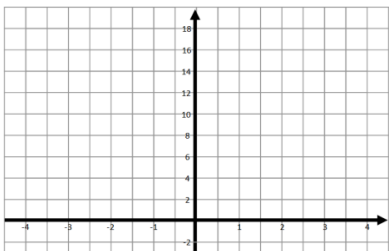
Number

TOPIC	VIDEO	PRACTISE	
<p>HCF and LCM To be able to find the HCF and LCM of numbers using the product of prime factors.</p>	 http://bit.ly/21P9joP	 http://goo.gl/IQ8uCK	
<p>Exam Question</p> <p>a) Write 84 as a product of prime factors</p> <p style="text-align: right;">b) What is the HCF and LCM of 84 and 48.</p> <div style="text-align: center; margin: 10px 0;">  </div> <p>84= _____ HCF: _____ LCM: _____</p>			
<p>Estimation To be able to round values appropriately to estimate an amount without a calculator.</p>	 http://goo.gl/8dJf5g	 https://goo.gl/IKZXLN	
<p>Exam Question</p> <p>a) Estimate the value of $\frac{2.4 \times 296.3}{(2.37)^2}$</p> <p>b) Mrs Martin is trying to calculate the cost of her electricity bill. She has used 1240 units at 10.8p per unit. She estimates it will cost £100. Is Mrs Martin Correct. <i>Show all your working out.</i></p>			
<p>Standard Form To be able to compare and calculate in standard form.</p>	 http://goo.gl/54MN8K	 https://goo.gl/yo3sMH	
<p>Exam Question</p> <p>a) Place the following numbers in order from smallest to largest.</p> <p style="text-align: center;">1.2×10^3, 2.1×10^{-2}, 2100, 1.02×10^{-3}</p> <p>b) Calculate $(3.2 \times 10^3) \times (2.4 \times 10^5)$</p>			




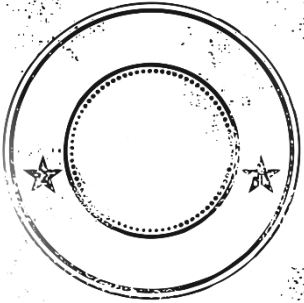
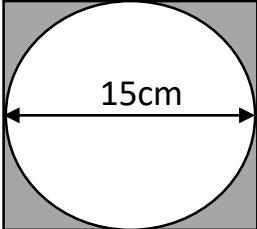


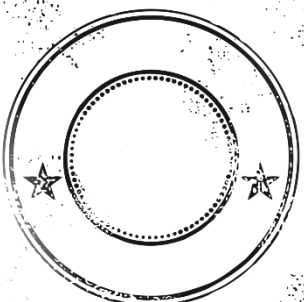
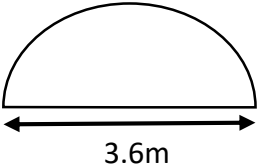


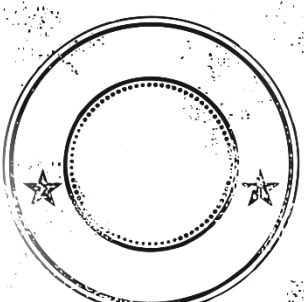
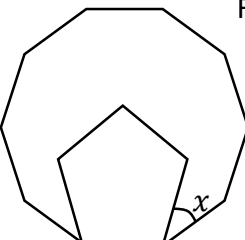
Algebra

TOPIC	VIDEO	PRACTISE	
<p>Expand Double Brackets To be able to expand double brackets.</p>	 https://goo.gl/gOYqSF	 https://goo.gl/NqxZe0	
<p>Exam Question 1) Expand $(x + 4)(x + 3)$ 2) Expand $(x - 5)(x + 7)$</p>			
<p>Equations To be able to solve two step equations</p>	 http://goo.gl/KkQPbH	 http://goo.gl/xv3Ifx	
<p>Exam Question Solve for x. a) $9 + 7x = 93$ b) $\frac{x}{4} - 5 = -11$</p>			
<p>Equations To be able to solve equations with unknowns on both sides.</p>	 http://goo.gl/0dyvpK	 http://goo.gl/xv3Ifx	
<p>Exam Question Solve for x. a) $18 + 6x = 2x + 42$ b) $12 - 3x = 5x + 30$</p>			




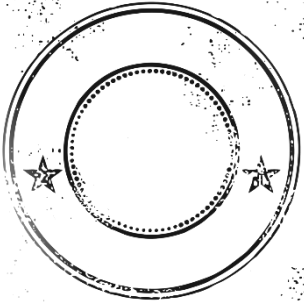
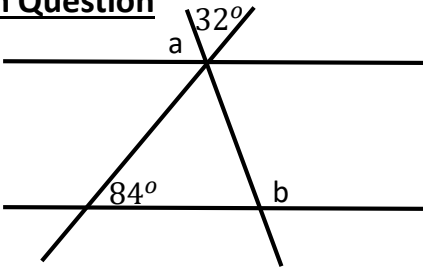


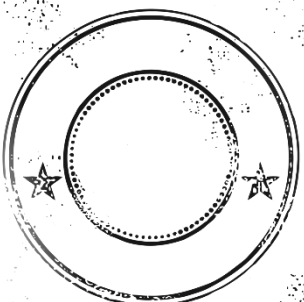
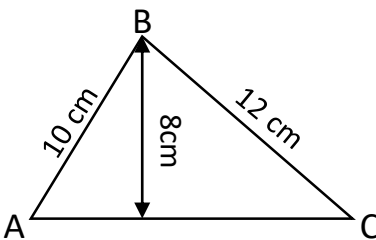


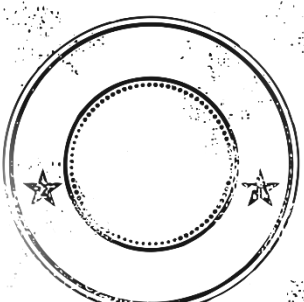
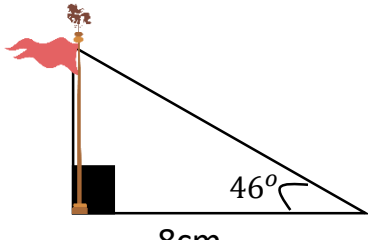
Algebra

TOPIC	VIDEO	PRACTISE																	
<p>Form and solve equations</p> <p>To be able to form equations from shapes and solve for x from shapes.</p>	 <p>http://goo.gl/YW2iZv</p>	 <p>http://goo.gl/98Lqwl</p>																	
<p>Exam Question</p> 		<p>Find the value of x.</p>																	
<p>Functions</p> <p>To be able to substitute into a given function.</p>	 <p>https://goo.gl/1TDgf5</p>	 <p>https://goo.gl/MbP9wr</p>																	
<p>Exam Question</p> <p>1) The input is 4 what is the output?</p> <p>2) The output was -1. What was the input?</p>																			
<p>Quadratic Graphs</p> <p>To be able to accurately plot a quadratic graph from the equation.</p>	 <p>http://goo.gl/9pvSpz</p>	 <p>http://goo.gl/3VVsWa</p>																	
<p>Exam Question</p> <p>a) Complete the table for the Equation $y = x^2 - x$</p> <table border="1" data-bbox="77 1850 625 1968"> <tr> <td>x</td> <td>-3</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></td> <td>2</td> <td>0</td> <td></td> <td></td> <td>6</td> </tr> </table> <p>b) Plot the graph $y = x^2 - x$</p> <p>c) Find the pair of solutions when $x^2 - x = 2$</p>		x	-3	-2	-1	0	1	2	3	y			2	0			6		
x	-3	-2	-1	0	1	2	3												
y			2	0			6												




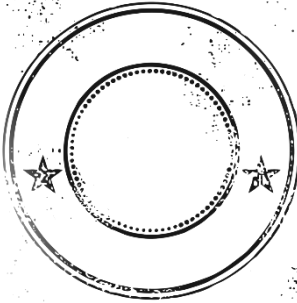
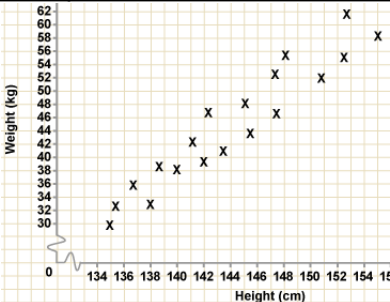
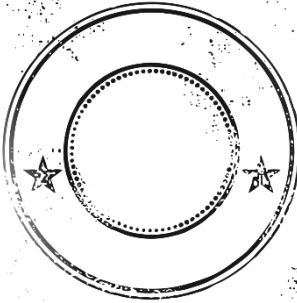


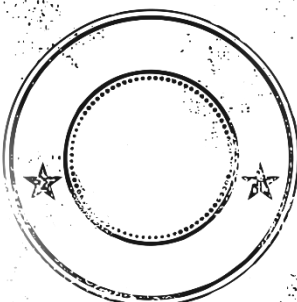
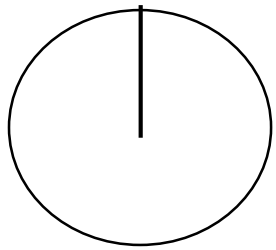
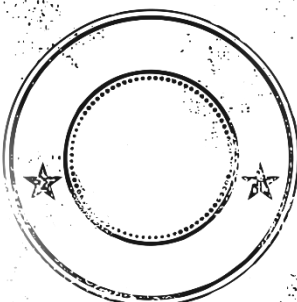


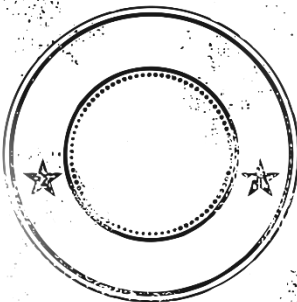
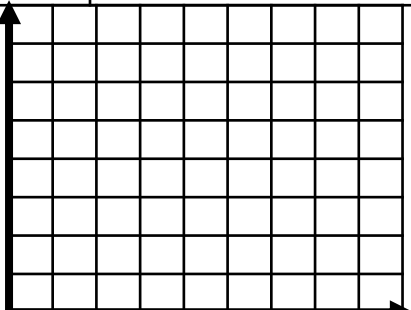
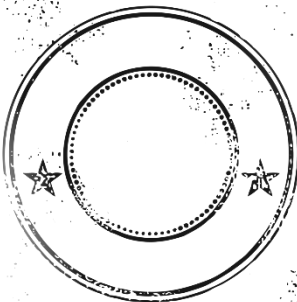
Shapes and Measures

TOPIC	VIDEO	PRACTISE	
<p>Circles</p> <p>To be able to find the area and circumference of circles.</p>	 http://goo.gl/5oI5FB	 http://goo.gl/3UsV7i	
<p>Exam Question Find the Area of the Shaded Region</p> 			
<p>Semi Circles</p> <p>To be able to find the perimeter of a semi-circles.</p>	 http://goo.gl/x7y6r2	 http://goo.gl/UtQ0jL	
<p>Exam Question Find the perimeter of the semicircle.</p> 			
<p>Angles in Polygons</p> <p>To be able to find missing angles in polygons</p>	 https://goo.gl/MGpqP2	 https://goo.gl/WGrHTH	
<p>Exam Question The diagram shows a regular decagon and pentagon. Find the size of angle x.</p> 			




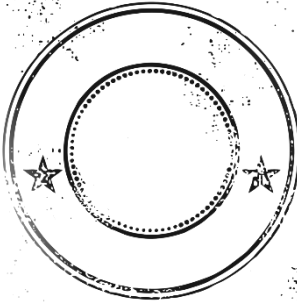


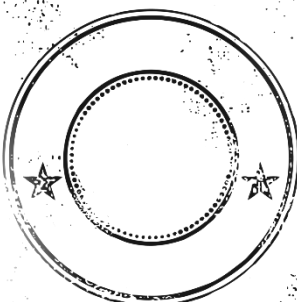
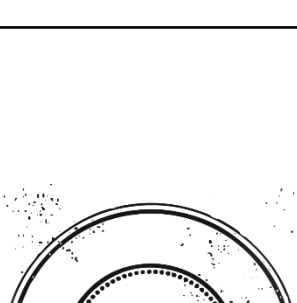


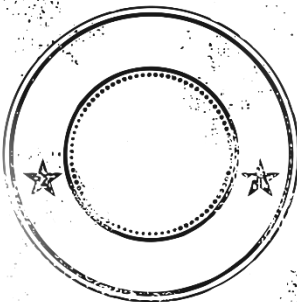
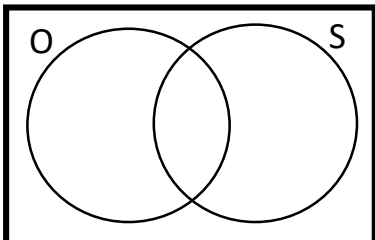

Shapes and Measures

TOPIC	VIDEO	PRACTISE	
<p>Angles on Parallel Lines</p> <p>To be able to calculate missing angles on parallel lines.</p>	 http://goo.gl/4Mxdaa	 http://goo.gl/gC2A6p	
<p>Exam Question</p> 		<p>Find angles a and b and give reasons for your answers.</p> <p>$a = \underline{\hspace{2cm}}$ because</p> <p>$b = \underline{\hspace{2cm}}$ because</p>	
<p>Pythagoras</p> <p>To be able to find the length of a missing side.</p>	 http://goo.gl/RWkW7S	 http://goo.gl/pp3eUN	
<p>Exam Question</p> 		<p>Calculate the area of the triangle ABC.</p>	
<p>Trigonometry</p> <p>To be able to apply the rules of trigonometry to find a missing length.</p>	 http://goo.gl/ICMyTq	 http://goo.gl/dwZ4Hk	
<p>Exam Question</p> 		<p>Calculate the height of the flag Pole.</p>	

Statistics

TOPIC	VIDEO	PRACTISE													
<p>Scatter Graphs</p> <p>To be able to accurately interpret information from a scatter graph using a line of best fit.</p>	 http://goo.gl/gH4yNU	 http://goo.gl/j59FC7													
<p>Exam Question</p> <p>a) Give the type of correlation shown in the graph.</p> <p>b) Draw a line of best fit for the data.</p> <p>c) Ahmed is 142cm tall, estimate Ahmeds weight.</p>															
<p>Pie Chart</p> <p>To be able to accurately draw a pie chart.</p>	 http://goo.gl/fMFLOi	 http://goo.gl/6cUv1Q													
<p>Exam Question</p> <p>Mrs Gardner asked 120 students what their favourite sweets are.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 20%;">No. people</th> <th style="width: 30%;">Sweet</th> <th style="width: 50%;">Size of Angle</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">26</td> <td style="text-align: center;">Haribo</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">Minstrels</td> <td style="text-align: center;">144°</td> </tr> <tr> <td style="text-align: center;">46</td> <td style="text-align: center;">M & Ms</td> <td></td> </tr> </tbody> </table>		No. people	Sweet	Size of Angle	26	Haribo			Minstrels	144°	46	M & Ms			
No. people	Sweet	Size of Angle													
26	Haribo														
	Minstrels	144°													
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<p>Frequency Polygon</p> <p>To be able to accurately draw a frequency polygon.</p>	 https://goo.gl/guwgFP	 https://goo.gl/HoMvT0													
<p>Exam Question</p> <p>Draw a frequency polygon.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <thead> <tr> <th style="width: 30%;">Height (cm)</th> <th style="width: 70%;">Frequency</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">$0 < h \leq 4$</td> <td style="text-align: center;">6</td> </tr> <tr> <td style="text-align: center;">$4 < h \leq 8$</td> <td style="text-align: center;">2</td> </tr> <tr> <td style="text-align: center;">$8 < h \leq 16$</td> <td style="text-align: center;">5</td> </tr> </tbody> </table>		Height (cm)	Frequency	$0 < h \leq 4$	6	$4 < h \leq 8$	2	$8 < h \leq 16$	5						
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Statistics

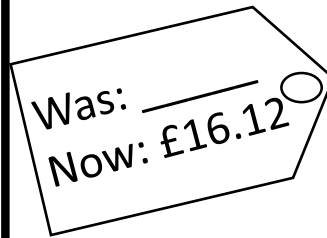
TOPIC	VIDEO	PRACTISE														
<p>Mean from a Table</p> <p>To be able to calculate the mean from a frequency table</p>	 http://bit.ly/1psxdoQ	 http://goo.gl/SrBl6E														
<p>Exam Question</p> <p>a) Calculate the median shoe size.</p>		<table border="1" style="margin: auto;"> <thead> <tr> <th style="padding: 5px;">Shoe Size</th> <th style="padding: 5px;">4</th> <th style="padding: 5px;">5</th> <th style="padding: 5px;">6</th> <th style="padding: 5px;">7</th> <th style="padding: 5px;">8</th> </tr> </thead> <tbody> <tr> <th style="padding: 5px;">Frequency</th> <td style="padding: 5px;">3</td> <td style="padding: 5px;">9</td> <td style="padding: 5px;">16</td> <td style="padding: 5px;">17</td> <td style="padding: 5px;">5</td> </tr> </tbody> </table>	Shoe Size	4	5	6	7	8	Frequency	3	9	16	17	5	<p>b) Calculate the mean shoe size.</p>	
Shoe Size	4	5	6	7	8											
Frequency	3	9	16	17	5											
<p>Mean from a Grouped Table</p> <p>To be able to calculate the mean from a grouped frequency table.</p>	 http://goo.gl/TbGyxH	 http://goo.gl/BR5q2B														
<p>Exam Question</p> <p>a) Calculate the median foot length.</p> <p>b) Calculate the mean foot length.</p>		<table border="1" style="margin: auto;"> <thead> <tr> <th style="padding: 5px;">Foot Length (cm)</th> <th style="padding: 5px;">Frequency</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">$5 < l \leq 10$</td> <td style="padding: 5px;">5</td> </tr> <tr> <td style="padding: 5px;">$10 < l \leq 15$</td> <td style="padding: 5px;">17</td> </tr> <tr> <td style="padding: 5px;">$15 < l \leq 20$</td> <td style="padding: 5px;">8</td> </tr> </tbody> </table>	Foot Length (cm)	Frequency	$5 < l \leq 10$	5	$10 < l \leq 15$	17	$15 < l \leq 20$	8						
Foot Length (cm)	Frequency															
$5 < l \leq 10$	5															
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$15 < l \leq 20$	8															
<p>Venn Diagrams</p> <p>To be able to categorise information into a Venn diagram and find simple probabilities.</p>	 https://goo.gl/C4yzgh	 https://goo.gl/C9NHnc														
<p>Exam Question</p> <p>$\epsilon = \{1,2,3,4,5,6,7,8,9,10\}$</p> <p>O = Odd Numbers</p> <p>S = Square Numbers.</p> <p>1) Complete the Venn Diagram.</p> <p>2) One of the numbers is chosen at random. Write down $P(O \cap S)$.</p>		<p>ϵ</p> 														

Number

A distance, d , was given as 350m, rounded to the nearest ten.
Complete the error interval for the distance.

$$\underline{\hspace{2cm}} \leq d < \underline{\hspace{2cm}}$$

There is a 45% sale.
How much did the doll originally cost?



You buy a new car for £2,500. Your car depreciates in value by 4% each year.
How much is it worth after 1 year?



Wayne Rooney's wage last year was £1,500,000 this year his wage is £1,750,000.
What is the percentage change?

Evaluate the following:

- a) 4^0
- b) 5^3
- c) $64^{\frac{1}{2}}$
- d) 3^{-7}

- 1) Write 254000 in standard form.
- 2) Express 1.05×10^{-3} as an ordinary number.

It is activity day 15% of students stay in school, $\frac{7}{20}$ go shopping.
What percentage of pupils go to the cinema?

If there are 1,400 students how many went to the cinema?

Calculate the following:

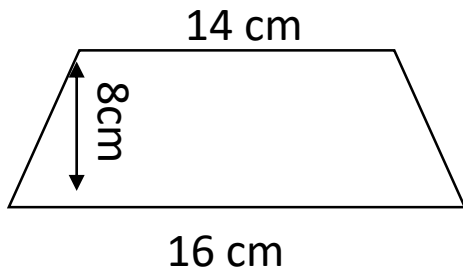
- a) $3\frac{4}{5} - 2\frac{1}{4}$
- b) $4\frac{1}{3} \times 5\frac{3}{4}$

Algebra

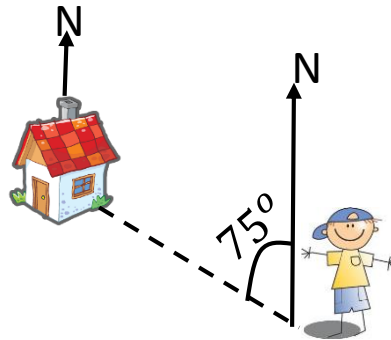
<p>Factorise the following expressions:</p> <p>a) $4x + 20$</p> <p>b) $3y^2 + 12y$</p> <p>c) $x^2 + 4y - 21$</p>	<p>Solve the following inequality</p> $2x - 4 < 18$
<p>Solve the following equation</p> $5x + 9 = 3x - 37$	<p>Solve the following pair of simultaneous equations.</p> $3x + 2y = 22$ $5x - 2y = 26$
<p>Change the subject to x.</p> <p>a) $3x + t = y$</p> <p>b) $\frac{x}{p} - pr = z$</p> <p>c) $t(x + r) = p$</p>	<p>Find the midpoint of the following coordinates.</p> $(-4, 6)$ $(10, -8)$
<p>What is the gradient of the line.</p> <p>Coordinate A (3, 5)</p> <p>Coordinate B (5, 9)</p>	<p>The equation of a line is</p> $y = 2x + 5$ <p>Write the equation of a line that is parallel to $y = 2x + 5$</p>

Shapes and Measures

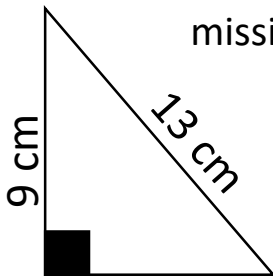
Calculate the area of the trapezium.



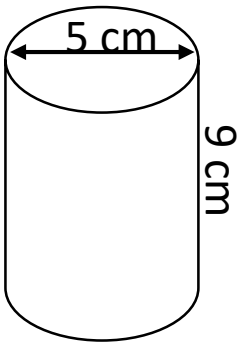
Calculate the bearing to the child from home.



Calculate the missing length.

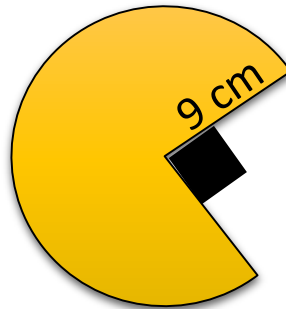


A polygon has an interior angle of 156° . How many sides does it have?

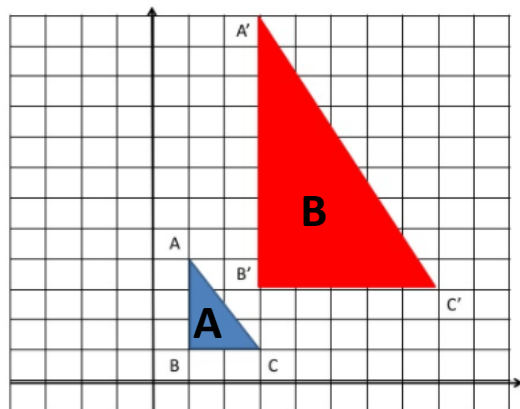


Calculate the volume of the cylinder.

Calculate the area and perimeter of Pacman.

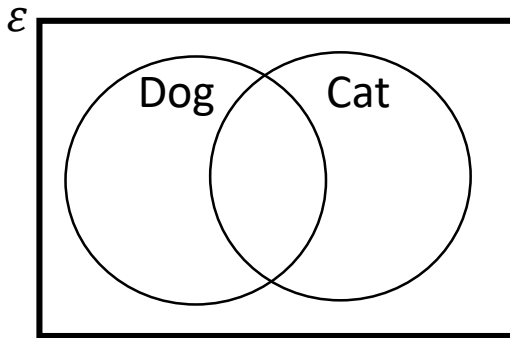


Describe fully the single transformation that maps A to B



Statistics

Here is a Venn Diagram



40 Students are asked if they have a dog or cat.

- 17 have a dog
- 23 have a cat.
- 9 have a dog but no cat.

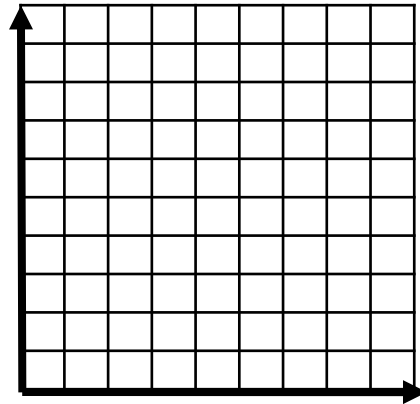
Complete the Venn Diagram.

Calculate the mean from the table.

Height (cm)	Frequency
$0 < h \leq 10$	9
$10 < h \leq 20$	7
$20 < h \leq 40$	8
$40 < h \leq 50$	6

Draw a frequency polygon.

Height (cm)	Frequency
$0 < h \leq 10$	9
$10 < h \leq 20$	7
$20 < h \leq 40$	8
$40 < h \leq 50$	6



A coin and a dice are thrown at the same time.

Calculate the probability I get a head and an even number.

GCSE Revision

Available	Tier	Grades
Passport One	Foundation	1-4
Passport Two	Foundation	3-4
Passport Three	Foundation/ Higher	4-5
Passport Four	Higher	5-6
Passport Five	Higher	7-9

Exam Tips

1) Highlight key words and measurements in the exam questions with a yellow highlighter.

E.g. 3 significant figures.



2) Show all of your working out. Whatever you type into your calculator should be written down as well.

3) Make sure your working out is clear by using sub headings if necessary.

4) Remember your units of measure on answers to the question.

5) Remember you can sometimes break a task into separate parts by using the sentences.

6) Make sure you know how to reset your calculator and check it is in degrees mode.

