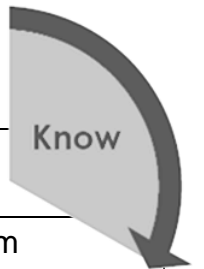


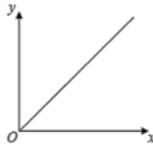
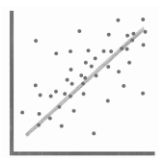

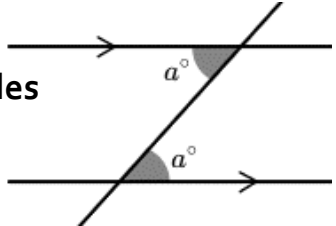
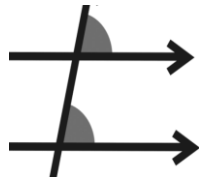
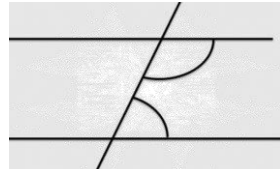
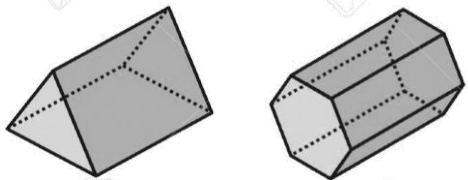

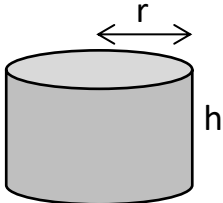
# ESSENTIAL KNOWLEDGE FOR YEAR 10 (H)



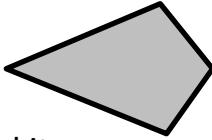
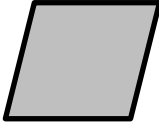
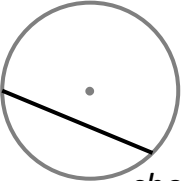
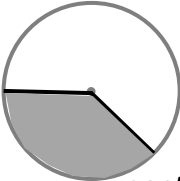
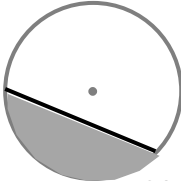
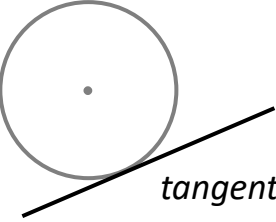
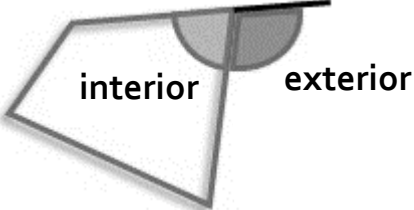
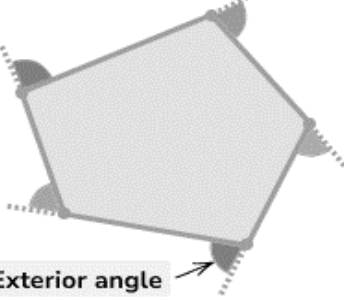
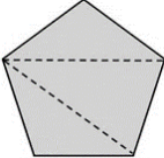
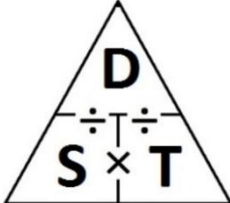
(LEARN THESE KEY FACTS FROM PREVIOUS YEARS)



Know

1.	The <b>subject</b> of a formula is the letter it starts with. (e.g. in the formula $H = 5m + d$ , the subject is H.)
2.	A <b>term</b> is a single 'piece' of algebra; the <b>coefficient</b> is the number part of the term (e.g. in the expression $5x - 4y + 8$ , the coefficient of $y$ is $-4$ )
3.	<b>expand</b> or <b>multiply out</b> mean 'rewrite the expression without the brackets'
4.	An <b>equation</b> is only true for certain values (e.g. $5x = 15$ is only true when $x = 3$ ) An <b>identity</b> is always true – it links equivalent expressions (e.g. $5(x + 2) \equiv 5x + 10$ )
5.	A <b>quadratic</b> expression has $x^2$ as its highest power (e.g. $5x^2 + 3x - 8$ )
6.	
7.	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>SOH</p> <p><math>\sin x = \frac{o}{h}</math></p> </div> <div style="text-align: center;"> <p>CAH</p> <p><math>\cos x = \frac{a}{h}</math></p> </div> <div style="text-align: center;"> <p>TOA</p> <p><math>\tan x = \frac{o}{a}</math></p> </div> </div>
8.	The first five <b>cube numbers</b> are: 1, 8, 27, 64, 125
9.	The <b>hypotenuse</b> is the longest side of a right-angled triangle 
10.	$<$ less than $>$ greater than $\leq$ less than or equal to $\geq$ greater than or equal to
11.	<b>integer</b> means 'whole number'
12.	
13.	The four types of transformation are: <b>translate</b> , <b>rotate</b> , <b>reflect</b> , and <b>enlarge</b>
14.	The <b>origin</b> is at (0, 0)
15.	<b>congruent</b> means 'the same shape and size' (one shape can be rotated or reflected)
16.	Shapes are <b>similar</b> ( <b>mathematically similar</b> ) if one is an enlargement of the other
17.	The <b>base angles</b> in an isosceles triangle are equal. 
18.	<div style="display: flex; justify-content: space-around; margin-top: 10px;"> <span>cuboid</span> <span>sphere</span> <span>cylinder</span> <span>cone</span> <span>pyramid</span> </div>

19.	<b>factorise</b> means 'put into brackets'
20.	A <b>difference of two squares</b> is an expression with two 'squares' subtracted e.g. $x^2 - 25$ They factorise into two brackets like this: $(x + 5)(x - 5)$
21.	A graph showing <b>direct proportion</b> is: <ul style="list-style-type: none"> <li>- a straight line</li> <li>- with positive gradient</li> <li>- through the origin</li> </ul> 
22.	 <i>positive correlation</i>  <i>negative correlation</i>
23.	An <b>outlier</b> is a genuine piece of data which doesn't fit the pattern of the rest of the data An <b>anomaly</b> is a piece of data which is a mistake
24.	Angles near parallel lines: <div style="display: flex; justify-content: space-around; align-items: flex-start;"> <div style="text-align: center;">  <p><b>alternate angles</b> are equal</p> </div> <div style="text-align: center;">  <p><b>corresponding angles</b> are equal</p> </div> <div style="text-align: center;">  <p><b>co-interior angles</b> add up to <math>180^\circ</math></p> </div> </div>
25.	<b>class</b> or <b>class interval</b> means 'group' (e.g. height (cm): $0 < h \leq 20$ )
26.	A <b>line segment</b> is a short section of a line, joining two points
27.	<b>bisect</b> means 'cut exactly in half'
28.	<b>perpendicular</b> means 'at right angles'
29.	A <b>locus</b> is a set of points that follow a rule (plural: <b>loci</b> )
30.	A <b>prism</b> has the same shape running all the way through the middle  
31.	In the general line equation $y = mx + c$ , <b>m</b> is the <b>gradient</b> (steepness), and <b>c</b> is the <b>y-axis intercept</b> (e.g. the line $y = 3x - 2$ has gradient 3 and crosses the y-axis at $-2$ )
32.	For the <b>surface area</b> of a solid, find the area of each face and add them all together
33.	Volume of a cylinder: $V = \pi r^2 \times h$ 
34.	<b>perimeter</b> is the total distance around the outside of a shape
35.	Anything to <b>power 0</b> is 1 (e.g. $17^0 = 1$ , $p^0 = 1$ )
36.	<b>index</b> means power (plural: <b>indices</b> )

37.	   
	<p>parallelogram                  trapezium                  kite                  rhombus</p>
38.	A <b>plan</b> view is looking down from above (a 'birds eye view')
39.	   
	<p>chord                  sector                  segment                  tangent</p>
40.	$C = d \times \pi$ to calculate the <b>circumference</b> of a circle
41.	$A = r^2 \times \pi$ to calculate the <b>area</b> of a circle
42.	<b>in terms of <math>\pi</math></b> means 'leave $\pi$ in your answer'
43.	<b>bearings</b> are measured: clockwise          from North          and written as 3 digits (e.g. 082°)
44.	<p>A pair of <b>interior and exterior</b> angles adds up to 180°</p> 
45.	<p>The <b>exterior angles</b> of any polygon add up to 360°</p> 
46.	<p>For an <math>n</math>-sided polygon, <b>sum of interior angles</b> = <math>(n - 2) \times 180</math></p> 
47.	The <b>balance</b> of a bank account is the amount of money that is in it.
48.	<b>depreciate</b> means 'decrease in value'
49.	<p>Learn the <b>speed, distance, time</b> triangle:</p> 
50.	<p>Learn the <b>density, mass, volume</b> triangle:</p> 