## Y10 ESSENTIAL KNOWLEDGE / LITERACY (H) (LEARN THIS KEY INFORMATION FROM PREVIOUS YEARS)

1. The subject of a formula is the letter it starts with. (e.g. in the formula $\mathrm{H}=5 \mathrm{~m}+\mathrm{d}$, the subject is H .)
2. A term is a single 'piece' of algebra; the coefficient is the number part ofthe term (e.g. in the expression $5 x-4 y+8$, the coefficient of $y$ is -4 )
3. expand or multiply out mean 'rewrite the expression without the brackets'
4. An equation is only true for certain values (e.g. $5 x=15$ is only true when $x=3$ )

An identity is always true - it links equivalent expressions (e.g. $5(x+2) \equiv 5 x+10$ )
5. A quadratic expression has $x^{2}$ as its highest power (e.g. $5 x^{2}+3 x-8$ )

| 6. | An irrational number is one that can't be represented as a fraction or integer <br> (Its decimal form goes on forever without recurring.) <br> A surd is an expression with a root which is irrational. |
| :--- | :--- |
| 8. | The first five cube numbers are: 1,8,27, 64, 125 |
| 9. | The hypotenuse is the <br> longest side of a <br> right-angled triangle |
| 10. | < less than <br> $\leq$ |

11. integer means 'whole number'
12. Angles on a straight line


Angles around a point add up to $360^{\circ}$
13. The four types of transformation are: translate, rotate, reflect, and enlarge
14. The origin is at $(0,0)$
15. congruent means 'the same shape and size' (one shape can be rotated or reflected)
16. Shapes are similar (mathematically similar) if one is an enlargement of the other
17. The base angles in an isosceles triangle are equal.

18.

cuboid

sphere

cylinder

cone

pyramid
19. factorise means 'put into brackets'
20. A difference of two squares is an expression with two 'squares' subtracted e.g. $x^{2}-25$

| 21. | They factorise into two brackets like this: $(x+5)(x-5)$ <br> A graph showing direct proportion is: <br> - a straight line <br> - with positive gradient <br> through the origin |
| :--- | :--- |
| 22. | positive <br> correlation |
| 23. | An outlier is a genuine piece of data which doesn't fit the pattern of the rest of the data <br> An anomaly is a piece of data which is a mistake |
| 24. | Angles near parallee lines: |


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

