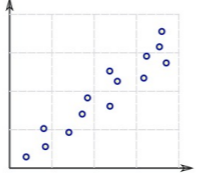
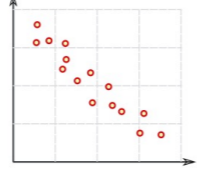
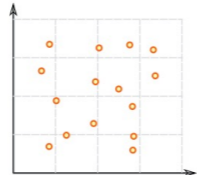
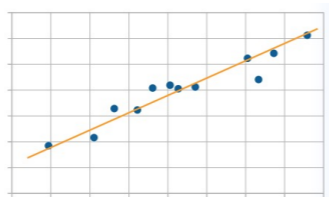


MATHEMATICS - YEAR 11 FOUNDATION - PART 1

A SCATTER GRAPHS		
1	Correlation	The strength of the relationship between two variables
2	Positive correlation	As one variable increases , the other increases 
3	Negative correlation	As one variable decreases , the other decreases 
4	Strength of correlation	The strength of correlation is either: <ul style="list-style-type: none"> • Strong – if the data is closely related • Weak – if the data is not closely related
5	No correlation	Occurs when there is no relationship between the variables 
6	Outlier	Values that are far away from the main group of data
7	Line of best fit	A straight line that best represents the data on a scatter graph.  It should: <ul style="list-style-type: none"> • Follow the direction of the data • Have approximately half the data above and half the data below • It does not have to go through any of the points on the graph

B TRANSFORMATIONS		
1	The 4 transformations	<ul style="list-style-type: none"> • Translation • Rotation • Reflection • Enlargement
2	Translation	Requires: <ul style="list-style-type: none"> • A column vector
3	Rotation	Requires: <ul style="list-style-type: none"> • The degrees turned (90° or 180°) • The direction (clockwise/anti-clockwise) • The centre of rotation
4	Reflection	Requires: <ul style="list-style-type: none"> • The equation of the mirror line
5	Enlargement	Requires: <ul style="list-style-type: none"> • A scale factor • The centre of enlargement

C VECTORS		
1	Vector	A vector is a straight arrow, pointing in one direction. It has a size and direction.
2	Column notation	A column vector is written: $\begin{pmatrix} x \\ y \end{pmatrix}$ x is movement along the x axis (horizontal) y is movement along the y axis (vertical)
3	Vector notation	Vectors can be written using letters, e.g. \mathbf{a} The vector $\overrightarrow{AB} = \mathbf{a}$
4	Negative vectors	If the vector $\overrightarrow{AB} = \mathbf{B}$, the vector $\overrightarrow{BA} = -\mathbf{B}$ The vectors are equal in size, but point in the opposite direction.
5	Adding and subtracting vectors	Add the x parts of the vector and add the y parts. For example: $\begin{pmatrix} 4 \\ 5 \end{pmatrix} + \begin{pmatrix} 3 \\ -1 \end{pmatrix} = \begin{pmatrix} 7 \\ 4 \end{pmatrix}$
6	Multiplying a vector by a scalar	Multiply the x and y parts of the vector by the scalar. For example: $3 \begin{pmatrix} 4 \\ 5 \end{pmatrix} = \begin{pmatrix} 12 \\ 15 \end{pmatrix}$