



Year 11 Maths Learning Journey

Autumn Term 2

Graphs: Non-linear graphs

Core knowledge	Reference
Plot and read from quadratic graphs “Why is $(-3)^2$ the same as 3^2 ”	Worksheet
Plot and read from cubic graphs “What mistakes can be made when substituting?”	Worksheet
Plot and read from reciprocal graphs “Why doesn’t the graph $\frac{1}{x}$ meet the axis?”	Worksheet
Recognise graph shapes “What features of a graph help us identify it’s equation?”	Worksheet
Identify and interpret roots and intercepts of quadratics “How do we identify the y intercept from a graph?”	Worksheet
Understand and use exponential graphs (H) “What does tend towards mean?”	Worksheet
Find and use the equation of a circle centre 0 (H) “How is Pythagoras theorem related to circle equations?”	Worksheet
Find the equation of the tangent to any curve (H) “How do you find the gradient of a tangent to a curve?”	Worksheet

Learning Checkpoints

LC Title	Completed	Dirt
Non-Linear Graphs LC		

Key Vocabulary:

Quadratic - Involving the second and no higher power of an unknown quantity or variable.

Parabola - A parabola is a curve where any point is at an equal distance from: a fixed point (the focus), and a fixed straight line (the directrix).

Curve - Gradually deviates from being straight for some or all of its length.

Estimate - Roughly calculate or judge the value, number, quantity, or extent of.

Cubic - Involving the third and no higher power of an unknown quantity or variable.

Asymptote - A straight line that continually approaches a given curve but does not meet it at any finite distance.

Infinity - A number greater than any assignable quantity or countable number.

Reciprocal - The quantity obtained by dividing the number one by a given quantity.

Tends Towards - To be disposed or inclined in action, operation, or effect to do something.

Roots - The points at which the graph crosses or touches x- axis, give the real roots of the function.

Solution - A means of solving a problem or dealing with a difficult situation.

Exponential - Becoming more and more rapid.

Origin - The point or place where something begins, arises, or is derived.

Tangent - A straight line or plane that touches a curve or curved surface at a point, but if extended does not cross it at that point.