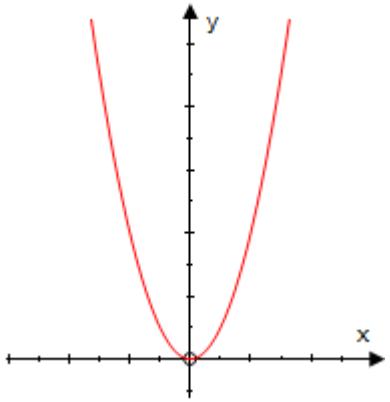
Hillcrest Mathematics Knowledge Organiser

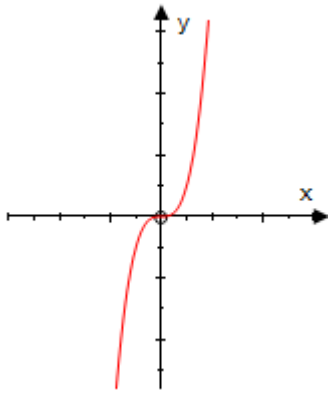
49 - Recognising and Sketching Graphs

Content



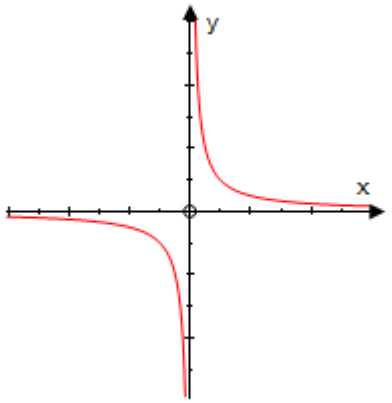
Quadratic Graph

- The highest power of x is 2.
- The graph above shows $y = x^2$.
- Other examples of quadratic graphs could be $y = x^2 + 2$, $y = 3x^2$, or $y = x^2 + 3x - 4$.



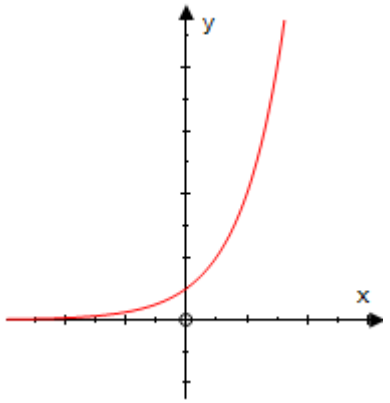
Cubic Graph

- The highest power of x is 3.
- The graph above shows $y = x^3$.
- Other examples of cubic graphs could be $y = x^3 - 5$, $y = 2x^3$, or $y = x^3 + x^2 + x + 1$.



Reciprocal Graph

- The graph above shows $\frac{1}{x}$.
- In this example, there are asymptotes at the x and y axes – this means that the graph gets closer and closer to the axes without ever touching them.



Exponential Graph

- Shows a number to the power of x, for example $y = 2^x$ or $y = 3^x$.
- Will always go through the point (0,1).
- Asymptote at the x-axis.

Sketching Graphs

To sketch any of these graphs, find all of the points where the graph will cross the x and y axes and any asymptotes. Ensure that the graph is the correct shape and label all of these points.

Linked Prior Topics	Vocabulary	Linked Future Topics
Equations, indices	Quadratic, cubic, reciprocal, exponential, power, asymptote	Solving equations, graph transformations