Exploring Cubic Graphs.

There are 12 graphs altogether, though they overlap to form 6 pairs which have rather beautiful symmetrical patterns. Each cubic pair are similar to each other, as they are the negative form of the algebraic graph equation.

In this brief, yet hopefully explanation, I shall state the functions of each of the cubic graph.

Two functions are given to us. They are:

$$y = (x+6)^3 - 2$$
$$y = -(x-9)^3 - 3$$

Using an app like GeoGebra or Desmos graphing calculator, we know that the graph (f) is the function $y = (x+6)^3 - 2$. Therefore, the ~~graph~~ graph (e) is the negative form of the function (f) which is the equation $-(x+6)^3 - 2$.
The graph (m) is $-(x-9)^3 + 3$. Therefore the graph (n) is $(x-9)^3 + 3$

Equations of the cubic graphs

(k): $y = -(x-6)^3 + 2$
(l): $y = (x-6)^3 + 2$
(i): $y = -(x-3)^3 + 1$
(j): $y = (x-3)^3 + 1$
(g): $y = -(x-0)^3 + 0$
(h): $y = (x-0)^3 + 0$

(e) : $y = -(x+3)^3 - 1$
(f) : $y = (x+3)^3 - 1$
(c) : $y = -(x+6)^3 - 2$
(d) : $y = (x+6)^3 - 2$
(a) : $y = -(x+3)^3 - 3$
(b) : $y = (x+3)^3 - 3$

The general formula is $(x+b)^3 - a$, where a and b are integers.
a is the y line for example in 'a', $y = -3$. The integer 'b' seems to increasing (or decreasing as a multiple of 3).

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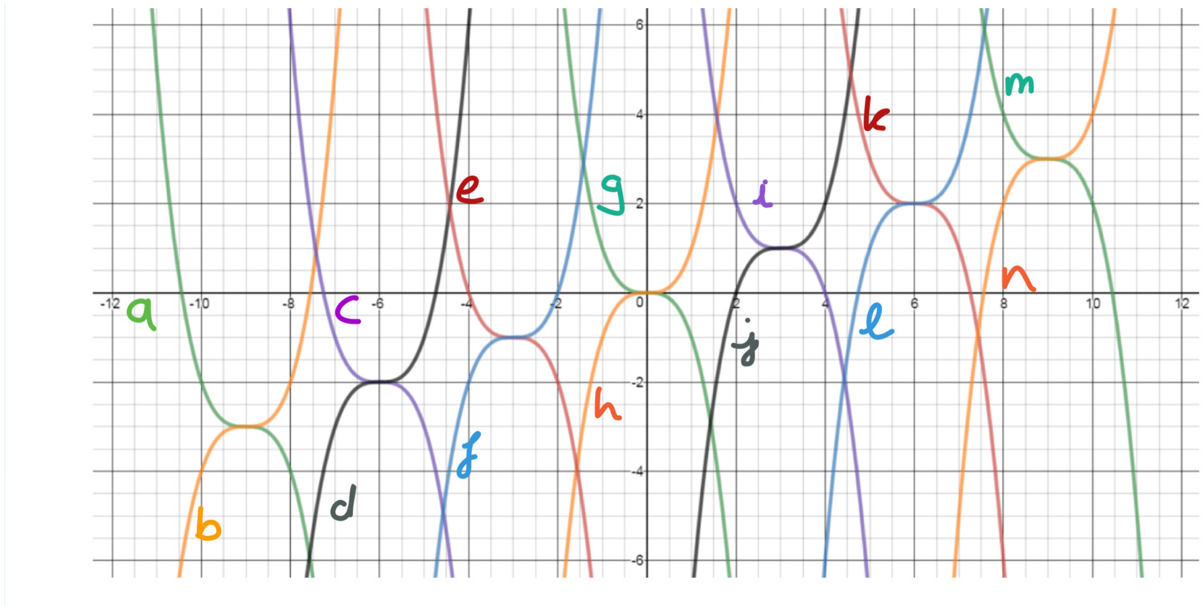

The cubic graphs arranged by letters. The colour of the letter corresponds to the colour of the graph.