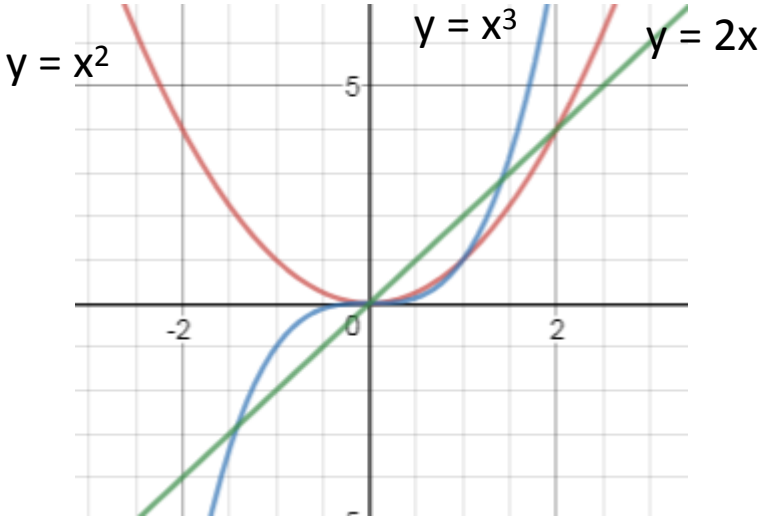
April 27th

Which is greater: $2x$, x^2 or x^3 ?

This rather depends of what the value of x is.

A graph of each might help……



For any value to the left the y axis, x^2 is the greater

y =2x is greater until y = 2x and $y=x^3$ intersect

Solving $2x = x^3$

Gives $x^2 = 2 \quad \therefore \quad x = \sqrt{2}$

So the full solution is

For $x < 0$ $\quad$ x^2 ***is greater***

For $0 < x < \sqrt{2}$ $\quad$ $2x$ ***is greater***

For $x > \sqrt{2}$ $\quad$ x^3 ***is greater***