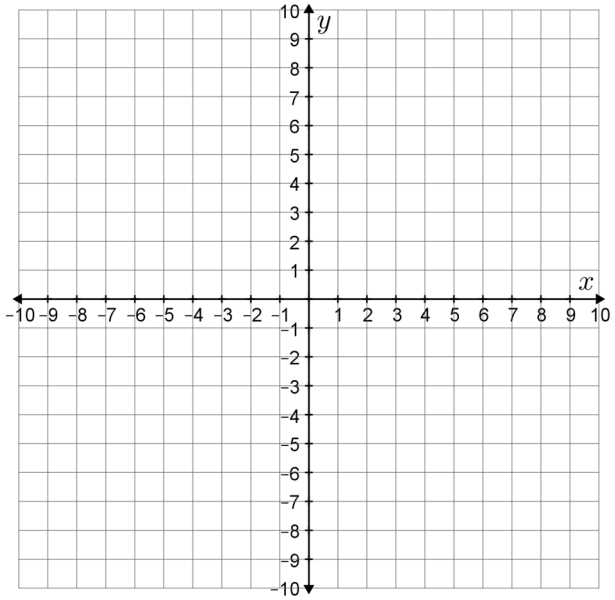
TRANSFORMATIONS OF $y = x^3$ AND $y = x^4$

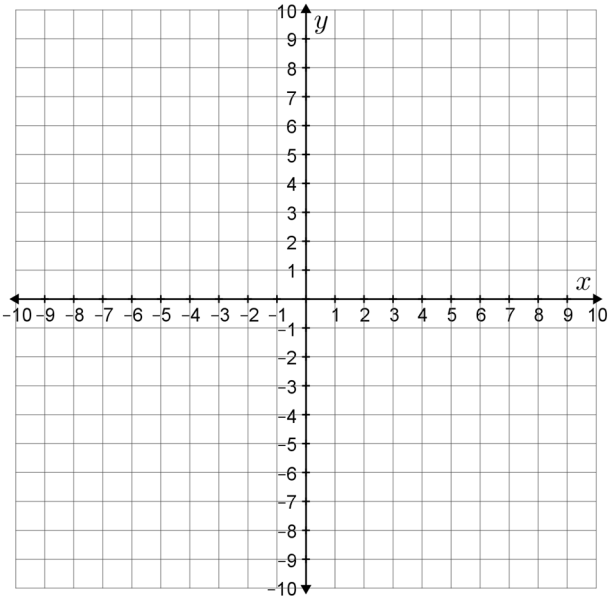
LESSON WORKSHEET

PART 1 | Transforming $y = x^3$

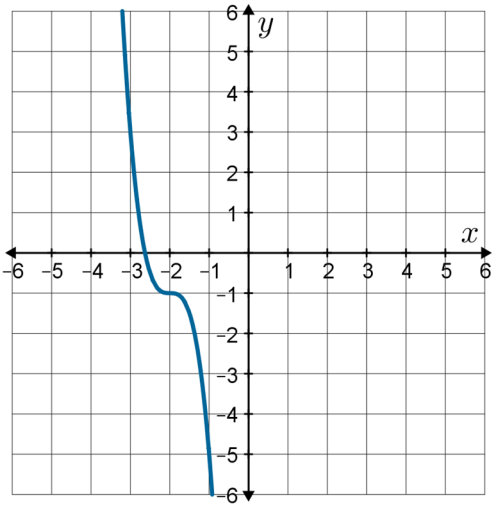
1) Sketch the graph of $y = x^3$



2) Using transformations on the graph of $y = x^3$, sketch the graph of $y = 2(x-4)^3 - 5$.



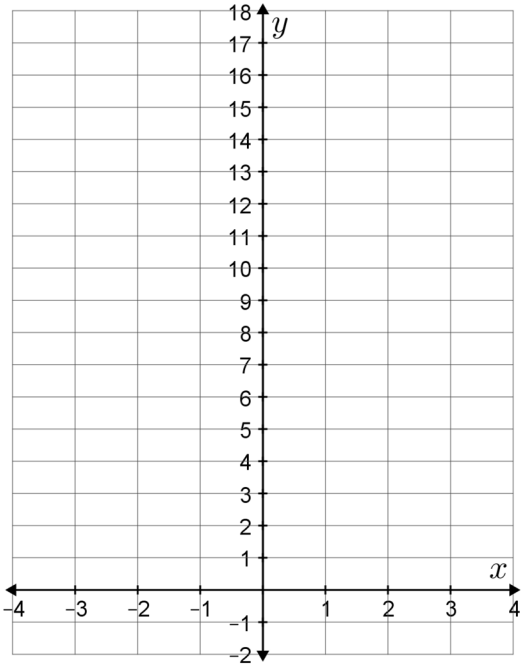
3) Determine an equation for the transformed graph of $y = x^3$ shown below.



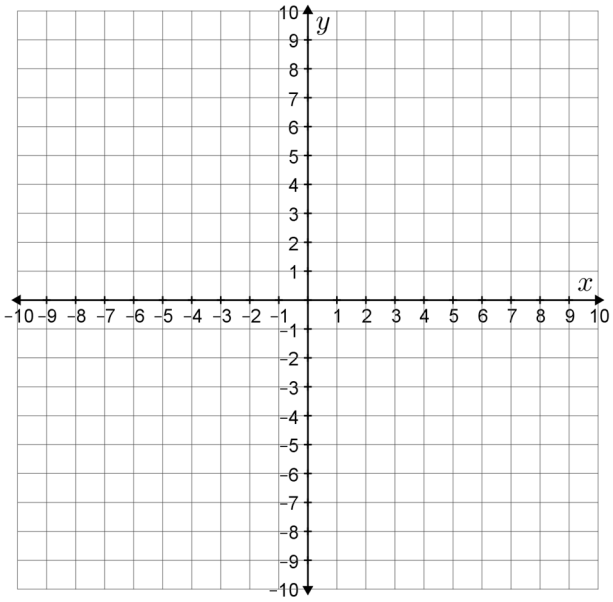
4) Determine the *x*-intercept(s) of the function $f(x) = -2(2x-10)^3 - 128$.

PART 2 | Transforming $y = x^4$

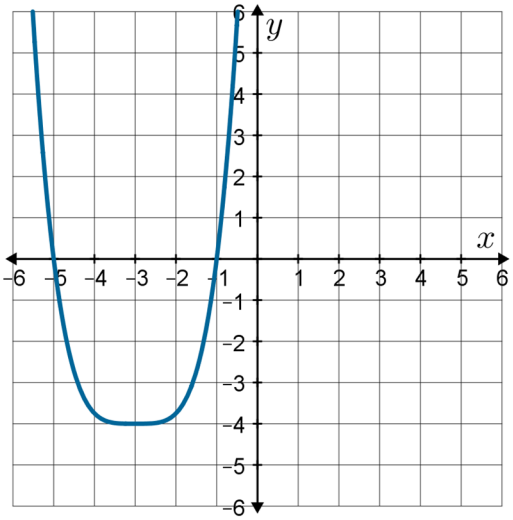
1) Sketch the graph of $y = x^4$



2) Using transformations on the graph of $y = x^4$, sketch the graph of $y = -\frac{1}{2}\left[\frac{1}{3}(x-2)\right]^4 + 6$.



3) Determine an equation for the transformed graph of $y = x^4$ shown below.



4) Determine the zero(s) of the function $f(x) = \frac{1}{2}(x+5)^4 - 8$.