BECA / IB Math 03-Quadratic functions
27 January 2022

Name: Solutions

**4.4 Do Now Quiz: Cubic functions and graphing**

1. Shown in the plot below is the function $f(x) = -0.5x^3 + x^2 + 5.5x - 6$

   (a) Write down the value of $f(0)$. On the graph, mark the point for $f(0)$ with a star.

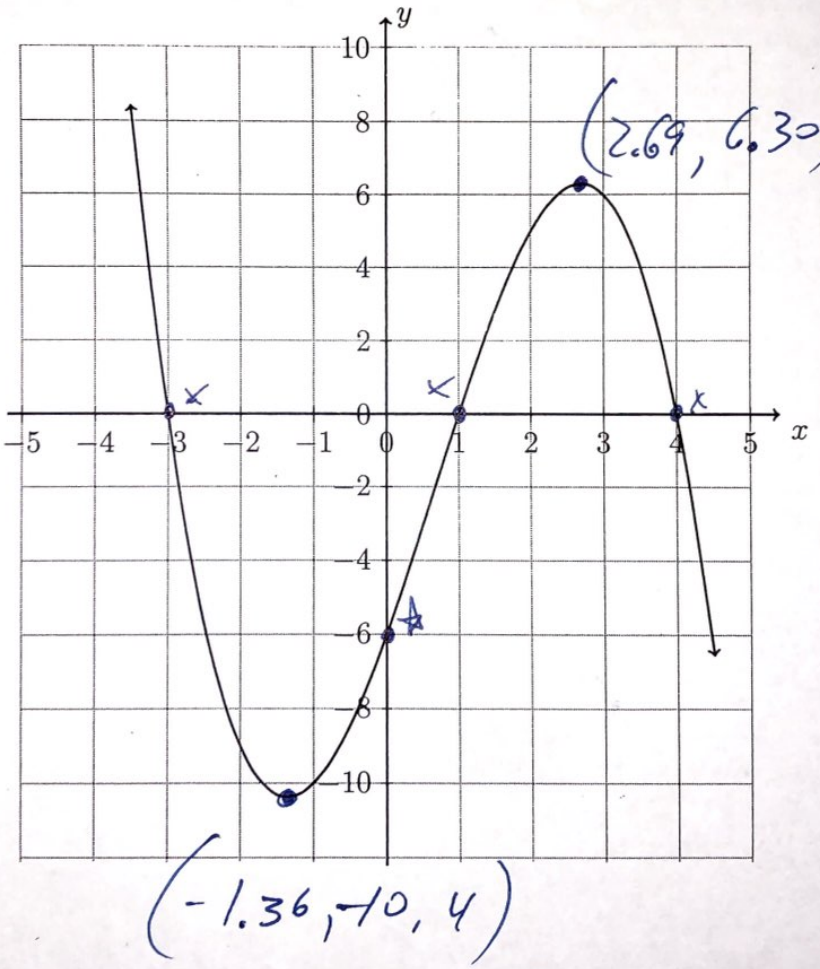
   $-6$

   (b) Write down the solutions to $f(x) = 0$. Mark them with "X" marks on the graph.

   $-3, 1, 4$

   (c) Mark the local maximum and minimum on the graph with their coordinates rounded to the nearest hundredth.

   (d) Mark the portion of the function that is *increasing* with a squiggly line.



2. Given the function $h(x) = x^3 - 2x^2 - 5x + 6$.

6

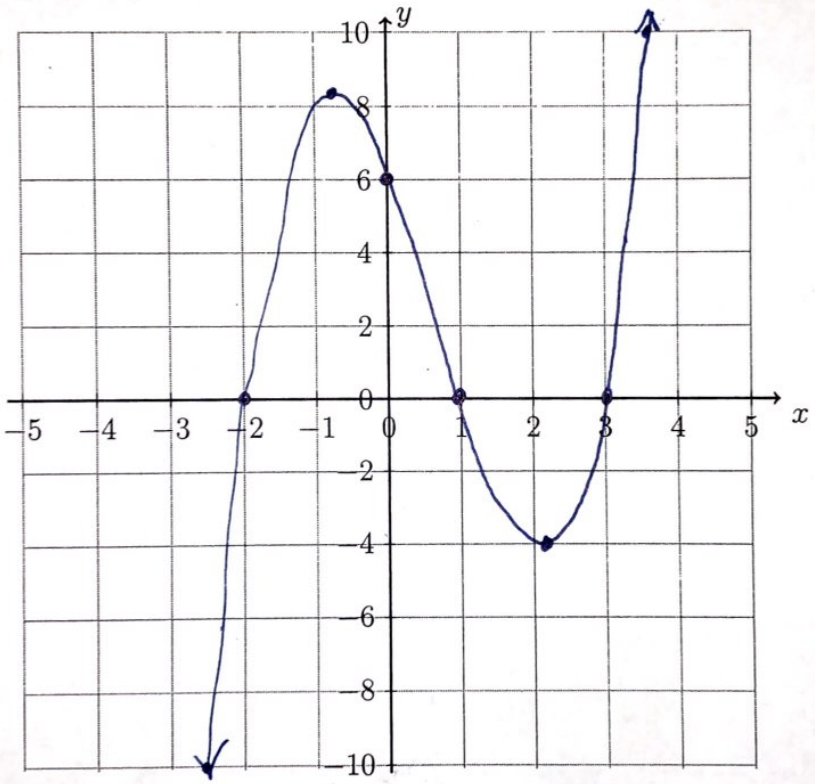
(a) Write down the $y$-intercept. Mark it on the plot.

(b) Show that 1 is an $x$-intercept because $x = 1$ is a solution to $f(x) = 0$. Mark $(1, 0)$ on the graph as an $x$-intercept.

$h(1) = 1^3 - 2(1)^2 - 5(1) + 6$

$= 0$

(c) The other $x$-intercepts are 3 and $-2$. Mark them on the plot.




(d) Graph the function on a calculator or computer and, hence, sketch the curve.