***Please look at the questions below and answer those that you can in the time allocated.***

1.  Sketch the following function:

$$y = x^3 - 4x^2 - x + 4$$

2.  What is bigger, $e^\pi$ or $\pi^e$?

3.  A ball, initially at rest, is pushed upwards by a constant force for a certain amount of time. Sketch the velocity of the ball as a function of time, from start to when it hits the ground.