Marks 4

The pH of surface ocean water is currently 8.10 (having fallen from a pre-industrial era level of 8.16), the concentration of HCO_3^- is 2.5×10^{-3} M, and it is saturated with $CaCO_3$. Calculate the concentration of Ca^{2+} in these conditions.

$[Ca^{2+}]$ =

The pH is expected to drop to about 7.8 by the end of the century as CO_2 levels increase further. What effect will this have on the solubility of $CaCO_3$ in sea water? Use chemical equations to assist with explaining your answer.