**Math 323: Homework 3**

Questions 1-3: Section 7.3: Problems 29, 31, 34.

Questions 4-8: Section 7.4: Problems 8, 13,15, 19, 26.

Question 9: Let $R$ be the quadratic integer ring $R = \mathbb{Z}[\frac{1+\sqrt{-3}}{2}]$. Decide whether the ideal $(2)$ (this is a principal ideal generated by the element $2 \in \mathbb{Z}$) is (a) prime and (b) maximal in this ring.