Homework due Friday, October 13, at 3:00 pm.

A. Read section 2.3 from Eccles.

B. Eccles, Problems I which begin on page 53, problems # 4, 6, 8, 9, 11.

C. Prove that for all positive real numbers $a$ and $b$ we have

$$\sqrt{ab} \geq \frac{2}{\frac{1}{a} + \frac{1}{b}}.$$ 

D. Let $\ell, m,$ and $n$ be three integers so that $\ell|m$ and $\ell|n$. Prove that

(i) $\ell|2m + 5n$.

(ii) $\ell|am + bn$, for all integers $a$ and $b$. 