

Homework 2

Due September 8th at the beginning of class. Justify your answers. Please let me know if you have a question or find a mistake.

1. Exercise 2.4.3 from page 31. Note that the values of a and b you use to show the estimates are best possible are allowed to depend on n .
2. Exercise 2.5.2 from page 32. This means showing that if $|a - 1| < \varepsilon$ and $|a - 2| < \varepsilon$, then $\varepsilon > 1/2$.
3. Let a be a real number such that $|a - 2| < \varepsilon$ for some given $\varepsilon > 0$. Give an upper bound for $|a^3 - 8|$ in terms of ε .
4. Parts (a) and (b) of Exercise 3.1.1 from page 46.
5. Exercise 3.4.3 from page 47.
6. Exercise 3.4.4 from page 47.
7. Exercise 3.6.1 from page 47.

Hint: Use the fact that \ln is an increasing function, with $\ln(1) = 0$ and $\ln(e) = 1$.