

*Math 251*  
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*Winter 2006*  
*Assignment #2*  
*Due FRIDAY Jan. 20*

**Comments:** For problems 3 and 4 from section 2.3 use the 11 limit laws and be sure to indicate where each is used. You should do the additional exercises before problems 30 and 32 from section 2.4.

**From the Textbook:**

- Section 2.3: 3, 4, 11, 12, 28, 37, 38
- Section 2.4: 1, 2, 4, 5, 30, 32

**Additional Exercises:**

1. Let  $f(x) = x^2 - 3x - 3$ . Fix  $\varepsilon > 0$  and suppose  $0 < \delta < \min\{1, \varepsilon/8\}$ . Show that  $|f(x) - 7| < \varepsilon$  whenever  $|x - 5| < \delta$ .
2. Let  $f(x) = x^3$ . Fix  $\varepsilon > 0$  and suppose  $0 < \delta < \min\{1, \varepsilon/7\}$ . Show that  $|f(x) - 1| < \varepsilon$  whenever  $|x - 1| < \delta$ .