

Homework Assignment # 1

Due: Wednesday, September 10, at the *beginning* of class.

- Section 1.1: # 1, 7, 8, 32, 41, 50, 58, 61, 64, 65.
- Section 1.2: # 1, 3, 4, 8, 14, 16.
- Section 1.3: # 1, 3, 4, 10, 11, 13, 14, 17, 21, 36, 37, 44, 50, 51, 56.
- Section 1.5: # 7, 9, 18, 26, 27.

- **“Scarves”**

You are knitting a scarf of constant width. Suppose $q(x) = b + ax$ is the function that gives the length $q(x)$, in feet, of the scarf after x balls of yarn have been used. Here a and b represent constants.

(a) What is the value of b ? Why?

(b) Is a positive, negative, or zero? Explain.

(c) Your friend is also knitting a scarf using a lace pattern that alternates between stitches and empty spaces. Your own scarf has no such empty spaces, only solid stitches. Your friend's length formula is $p(x) = cx$, where c is a constant. Which constant is larger, a or c ? Why?

General Guidelines

- On most problems, putting down just the answer is not enough. Be sure to include an explanation whenever a question asks (like the scarf problem above), and to show all relevant work for computational problems. I will expect you to show your work and explain your answers on exams, so it is a good idea to get into the habit now.
- Please write neatly and legibly, so the grader can easily read your work.
- Leave space around the problems for the grader to write corrections and suggestions.
- **Write up the problems in the order listed on this sheet.** This helps the grader enormously. If you leave out a problem by accident and need to put it on the last page, please insert a note at the appropriate spot, telling the grader where to look for the problem.
- Staple your assignment together.