Math 120 A - Spring 2006
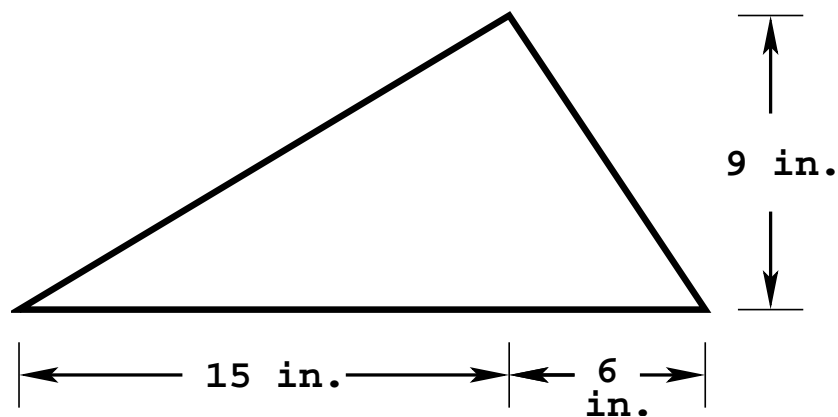## Mid-Term Exam Number One
April 20, 2006

Name: _____   Section: _____

1	10	
2	10	
3	10	
4	10	
Total	40	

- Complete all questions.

- You may use a calculator during this examination. Other electronic devices are not allowed, and should be turned off for the duration of the exam.

- If you use a trial-and-error or guess-and-check method, or read a numerical solution from a graph on your calculator when an algebraic method is available, you will not receive full credit.

- You may use one hand-written 8.5 by 11 inch page of notes.

- Show all work for full credit.

- You have 50 minutes to complete the exam.

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1. Triangolo Pizzeria sells pizza in the form of a triangle. They are shaped as shown in this figure:
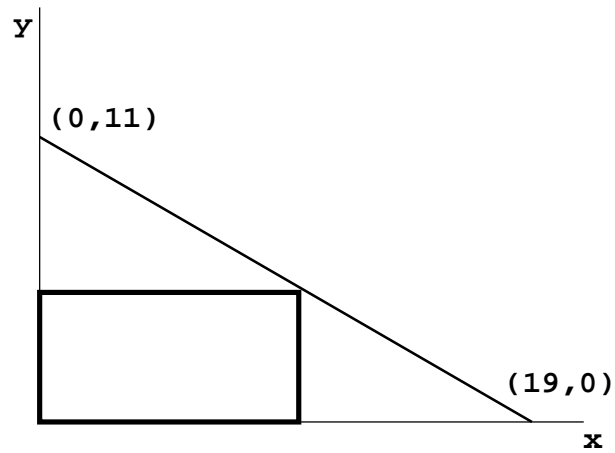
9 in.

15 in.

6 in.

Suppose you cut the pizza with a cut perpendicular to the long side of the pizza. Suppose the slice is x inches from the leftmost point.

Express the area of the pizza to the left of the slice as a multipart function of x.

2. Jessie is planning to bicycle from Casserole to Needham. The town of Lakewood is located 30 miles east and 25 miles north of Needham. The town of Casserole is located 7 miles west and 10 miles north of Lakewood. How close to Lakewood will she get on her trip?

3. What is the area of the largest rectangle that you can place in the triangle shown? One corner of the rectangle should be at the origin, one side should be along the x-axis, one side along the y-axis, and one corner should lie on the line shown. The x- and y-intercepts of the line are labeled in the figure.

A rectangle (not the largest one) fitting the criteria is shown in the picture.

4. Laura is hiking through the Circular Forest, which has the shape of a circle with a 5 mile radius. She will start her trip 3 miles east and 4 miles north of the easternmost point of the forest, and hike directly to the westernmost point, where she will leave the forest.

For what distance will she walk through the forest?