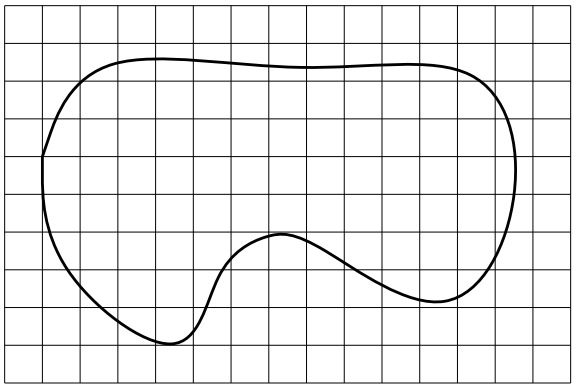
Math 191 Fundamentals of Mathematics II
12.7: Approximating Areas of Irregular Shapes
February 26, 2014

1. Give an overestimate and underestimate for the area of the shape drawn below using the grid lines. Assume that the grid lines are 0.5 cm apart from each other.



2. Say that the figure above is the drawing of a lake from a map. On this map, 1 cm represents 10 km. If you assume that the lake has the same area as 70 grid squares, what is the area of the actual lake? (Remember that the grid lines are 0.5 cm apart.)

3. Say you have traced the map of the lake onto a 5 cm by 8 cm piece of cardstock, and the whole page of cardstock weighs 20 grams. When you cut out the drawing of the lake and weigh just that part of the cardstock, you find that it weighs 8 grams. What does this method say about the area of the lake? (Remember that on this map, 1 cm represents 10 km.)

4. You cover the lake on the map with a .2-cm-thick layer of modeling dough, then reform the dough into a rectangle of the same thickness. If this rectangle is 3 cm by 6 cm, what does this method say about the area of the lake? (Again, use that on this map, 1 cm represents 10 km.)