AP Statistics NAME _____
Ch. 11 WS PER _____

Suppose that in a box of a dozen eggs, there is one bad egg. You are baking a cake which requires 4 eggs. You select the eggs at random, because you can't tell the egg is bad until you break it open. What is the likelihood that you will come across the bad egg in your selection of 4 eggs?

a) Explain how you would conduct a simulation using your calculator to answer this question.

b) Perform your simulation 20 times (that is, run 20 trials of your simulation.) Write down exactly the numbers you see on your calculator for each trial, and report whether the bad egg surfaced.

c) According to your simulation, what is the likelihood that you will come across the bad egg?

On January 1 of every year, many people watch the Rose Parade on television. The week before the parade is very busy for float builders and decorators. Roses, carnations, and other flowers are purchased from around the world to decorate the floats. Based on past experience, one float decorator found that 10% of the bundles of roses delivered will not open in time for the parade, 20% will have bugs on them and be unusable, 60% of the bundles of roses will turn out to be beautiful, and the rest will bloom too early and start to discolor before January 1. This year, the decorator's float will require 15 bundles of roses.

a) Explain how you would conduct a simulation using the random number table provided below to estimate how many bundles of roses the float decorator will need to purchase to have 15 good bundles to place on the float.

b) Perform your simulation three times (that is, run 3 trials of your simulation.) Start at the leftmost digit in the first row of the table and move across. Make your procedure clear so that someone can follow what you did. You must do this by marking directly on or above the table, or by writing down the numbers you used. Report the number of bundles needed in each of your three trials.

81638	36566	42709	33717	59943	12027	46547	61303	46699	76423
38449	46438	91579	01907	72146	05764	22400	94490	49833	09258

c) According to your simulation, what is your estimate for the number of bundles purchased?

d) Do you think this estimate is reliable? Why or why not?