SCIE 300, Activity

Tuesday, September 26th, 2017

Name_____ Section_____

(1) *Communicating risk:* Consider the two scenarios described below. In each case, Canada is preparing for the outbreak of an unusual disease which is expected to kill 600 people. The government can choose between two alternative programs, A and B, that have the following predicted outcomes:

Program A: will save 200 lives.

Program B: with probability 1/3 there will be 600 lives saved, with probability 2/3 no people will be saved.

Which program would you choose?

Suppose the country faces the same risk described above, but the two competing programs are now C and D, having the following predicted outcomes:

Program C: 400 people will die.

Program D: with probability 1/3 there will be no deaths, with probability 2/3 there will be 600 deaths.

Would you favour program C or D?

Working with a partner, describe the reasoning here; how do you think most people would respond when confronted with the two decisions above?

(2) Suppose the following experiment was proposed to investigate the effect of long-distance running on life expectancy: select 200 Canadians at random who all have their thirtieth birthday this year. Allocate these subjects at random to the following four treatments groups, so that fifty subject are in each group:

- Run at least twenty miles per week.
- Run between ten and fifteen miles per week.
- Run between five and ten miles per week.
- Do no strenuous exercise at all.

Monitor the subjects for fifty years. Record the age and cause of death of those subjects not still alive at the end of the study.

Give at least three problems with the proposed experiment.