**CONCEPTUAL**

2) Probability of bootstrapping

(a) (n-1) / n - Every observation has an equal likelihood of being selected. Consequently, the probability of it not be the jth observation is the probability of being all observations but the jth.

(b) (n-1) / n

(c) The probability is true if “n” selections a required to create the bootstrap sample. Therefore, the probability of the jth observation not being in the bootstrap is (1 – 1/n), i.e. one sample not being the jth observation, to the “n” power.

(d) P (jth observation is in the bootstrap sample) = 1 – P (probability jth observation is NOT in the boostrap sample)

P (NOT in bootstrap sample) = (4 / 5) \*\* 5 =0.3728

P (at least once IN the bootstrap sample) = 1 – 0.3728 = 0.6732 ~ 67%

(e) P (jth observation is IN the bootstrap sample) = 63.3%