Date:
Name 1:
Name 2:

Assume we have a relation R(a,b).

- This relation contains 1 million tuples. Its primary key is a.
- Each block can hold at most 20 tuples.
- The values of b are distributed between the values of 1 and 1000., and any value of b is equally likely to appear (uniform distribution).
- There are three indexes on R. A sparse index on R(a), and dense indexes on R(a) and R(b).
- Each index block can hold at most 150 index records. However, on average, only 100 index records are placed in each block.
- Values of a vary from 1 to 1,000,000

Compute the cost (number of blocks read) of the following queries.

a) $\sigma_{a=5}R$
b) $\sigma_{a > 10 \text{ and } a <= 100}R$
c) $\sigma_{b=5}R$