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.

Compute the cost (in block read) of the following queries.

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