Question 7 (10 marks)

Consider two relations *R(id,x,y)* and *S(rid,a,b,c)*, with b_R = 100 and b_S = 500, and a join operation on these two tables:

```
select * from R join S on (R.id = S.rid)
```

Assume that each *R* tuple joins with exactly one *S* tuple, and that any hash functions used distribute the tuples uniformly.

Ignoring the cost of writing the final output (the joined tuples), describe how each of the following joins would occur and calculate the number of reads and writes that would occur in evaluating them:

a. using *simple* hash join with 10 memory buffers

b. using *hybrid* hash join with 20 memory buffers, and holding one bucket of *R* in memory

Show all working.

Instructions:

- Type your answer to this question into the file called q7.txt
- Submit via: **give cs9315 sample_q7 q7.txt**
  or via: Webcms3 > exams > Sample Exam > Submit Q7 > Make Submission

End of Question