Quiz 1

1. **b, c, d (or b, c)**(1 point)
2. **a, b, c** (1 point)
3. **b** (1 point)
4.

map(key, value)

for each v in value (set of integers):

emit(1, 1) (1 point)

combiner: combine all the values with key = 1, and emit (1, n) (1 point)

reduce(key, values)

count = 0

for each v in values:

count += v (1 point)

emit(count) (1 point)

5.a

I. Probability that any one person is at some hotel on a given day d:

$$10^{-2} \times 10^{-2} \times 10^{-2} = 10^{-6}$$

II. Probability that p and q will be at same hotel on day d1 and d2:

$$(10^{-6})^{2} = 10^{-12}$$

III. Pairs of days = 100C2 = $100^2/2$; If n is very large

IV. Probability that p and q will be at same hotel on some two days:

(Number of pairs of days)×(probability of p and q to be at same hotels for 2 days):

$$100^2/2 \times 10^{-12} = 5 * 10^{-9}$$

V. Pairs of people = 10^6C2= $(10^6)^2/2 = 5 \times 10^{11}$; If n is very large

VI. Expected number of suspicious pairs of people:

$$5 \times 10^{11} \times 5 \times 10^{-9} = \mathbf{2500}$$

(Answer 1 point, Calculation 1 point)

5.b

Go down (1 point)