Name:_____KEY_____

CS 589 Principles of Database Systems
Winter 2011
Quiz 6

No books or notes.

Consider the following tableau query Q and relation instance r, both on the schema (fLight Date Business Economy):

Q(	L	D	B	E)
w1	f	d1	15	e1
w2	f	d	c	e
w3	f1	d1	20	e
wr		d	c	

r(	L	D	B	E)
t1	117	4May	17	30
t2	117	5May	15	40
t3	117	6May	15	55
t4	212	4May	20	45
t5	212	5May	20	30
t6	391	5May	15	40
t7	391	6May	18	30

5-A. (10 points) For each tuple t(D B) below, say if t ∈ Q(r) or not, and justify your answer.

a. <4May 17> *Yes*
We can map w2 → t1, w1 → t2 and w3 → t5.

b. <4May 20> *No*
The only thing we can map w2 to is t4. That requires that w1 map to a tuple with L = 212. The possibilities are t4 and t5, but neither works because both have B =20, rather than 15.

c. <5May 18> *No*
There is no tuple with D = 5May and B = 18, so there is nothing to map w2 to.

d. <5May 15> *No*
The only choices for w2 are t2 and t6. Both have E = 40. So w3 must map to a tuple with E = 40. But the only candidates (t2 and t6) have B = 15 rather than B = 20.

e. <6May 18> *Yes*
We can map w2 → t7, w1 → t6 and w3 → t5.

f. <6May 15> *No*
The only possibility for mapping w2 is t3. However, t3(E) = 55. Thus w3 would need to map to a tuple with B = 20 and E = 55, and there is no such tuple.