Name: _____

Instructions: You have 7 minutes to complete the quiz.

(1) (5 pts) What does it mean for a set G to be group under the operation $\star$?

It means that $\star$ is a binary operation on G (ie, $\star : G \times G \to G$) satisfying

1) for all $a, b, c \in G$, $(a \star b) \star c = a \star (b \star c)$ [associativity]

2) there exists $e \in G$ so that for all $g \in G$ we have $g \star e = g = e \star g$ [identity]

3) for all $g \in G$ there exists $g^{-1} \in G$ so that $g \star g^{-1} = e = g^{-1} \star g$. [inverses]

(2) (5 pts) Write a Cayley table for $U(10)$ (where the group operation is multiplication mod(10)).

The elements of $U(10)$ are 1, 3, 7 and 9.

	1	3	7	9
1	1	3	7	9
3	3	9	1	7
7	7	1	9	3
9	9	7	3	1