Math 361
Quiz 1

10 points possible

1. (5 pts.) The table below can be completed to define a *group*.

$*$	a	b	c	d	m	f
a	d	f	m	a	c	b
b	m	d	f	b	a	c
c	f	m	d	c	b	a
d	a	b	c	d	m	f
m				m	f	d
f				f	d	m

(a) Assume that this is possible and compute the missing entries.

(b) Find the identity element.

(c) Find the inverse of each element.

2. (5 pts.) Prove directly from the group axioms that in a group $(G, *)$,

$$\text{if } b * a = c * a, \text{ then } b = c.$$

(Each time you use a group axiom, state which one.)