

Quiz #3

Monday, October 2 2017

Duration: 15 min

NAME: _____

Please write clearly and properly. Justify your answers carefully.

Problem	Grade
1	
2	
Total	

Problem 1 (~ 6 points).

Let $S = \{1, 2, 3\}$. Consider the binary operation $*$ given by the following table:

$*$	1	2	3
1	3	1	2
2	1	2	3
3	2	1	3

Is this binary operation commutative? Is it associative? Is there an identity element? Explain.

Problem 2 (~ 4 points).

Let $(S, *)$ be a magma. Recall that an element $a \in S$ is called *idempotent* when $a * a = a$. Assuming that $*$ is associative and commutative, show that the set $T \subseteq S$ consisting of idempotent elements is closed under $*$.

