1. In each of parts (a) and (b), an operation $\*$ is defined over the set of natural numbers.

 For each operation, determine:

 (i) $3\*2$

 (ii) if the set of natural numbers is closed with $\*$

 (iii) if $\*$ is commutative

 (iv) if $\*$ is associative

 Prove your answers sufficiently.

(a) $a\*b=2a+b$

(b) $a\*b=ab^{2}$