



Group Theory Assignment 1

1. Determine whether or not the given \star is a binary operation on the given set S .

(a) $S = \mathbb{R}$, $a \star b = \frac{a}{a^2 + b^2}$

(b) $S = \mathbb{R}$, $a \star b = a$

(c) $S = \{1, 6, 3, 2, 18\}$, $a \star b = ab$

(d) $S = \{1, -2, 3, 2, -4\}$, $a \star b = |b|$