

1. Does the following table describe an associative operation?

*	e	a	b	c
e	e	a	b	c
a	a	a	e	e
b	b	e	b	e
c	c	e	e	c

2. Does the following table describe a group?

*	(0,0)	(0,1)	(1,0)	(1,1)
(0,0)	(0,0)	(0,1)	(1,0)	(1,1)
(0,1)	(0,1)	(0,0)	(1,1)	(1,0)
(1,0)	(1,0)	(1,1)	(0,0)	(0,1)
(1,1)	(1,1)	(1,0)	(0,1)	(0,0)

3. Let  $G = \left\{ \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}, \begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}, \begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}, \begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix} \right\}$  be  $\{e, a, b, c\}$ . Does the following table describe a group?

*	e	a	b	c
e	e	a	b	c
a	a	e	c	b
b	b	c	e	a
c	c	b	a	e

4. Let  $G = \{1, i, -1, -i\}$  Fill in the table with your Math D knowledge (yes, I mean that  $i = \sqrt{-1}$ ) and determine if this table provides us with a group.

*	1	$i$	-1	$-i$

5. Does the following table describe a group?

*	$g_1$	$g_2$	$g_3$	$g_4$	$g_5$
$g_1$	$g_1$	$g_3$	$g_4$	$g_5$	$g_2$
$g_2$	$g_3$	$e$	$g_5$	$g_1$	$g_4$
$g_3$	$g_4$	$g_5$	$e$	$g_2$	$g_1$
$g_4$	$g_5$	$g_1$	$g_2$	$e$	$g_3$
$g_5$	$g_2$	$g_4$	$g_1$	$g_3$	$e$