

c) The elements of the quotient group G/H are: $H, 7H, 13H, 19H$.
The Cayley table for the quotient group is

	H	7H	13H	19H
H	H	7H	13H	19H
7H	7H	H	19H	13H
13H	13H	19H	H	7H
19H	19H	13H	7H	H

Each element is self inverse, so the quotient group G/H is isomorphic to the Klein group K_4 (or the group of symmetries of the rectangle, $S(\square)$).

$\frac{10}{10}$

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6) a) The group action table of $S(\Delta)$ on the set X is:

	e	a	b	r	s	t
S_1	S_1	S_3	S_5	S_6	S_4	S_2
S_2	S_2	S_4	S_6	S_5	S_3	S_1
S_3	S_3	S_5	S_1	S_4	S_2	S_6
S_4	S_4	S_6	S_2	S_3	S_1	S_5
S_5	S_5	S_1	S_3	S_2	S_6	S_4
S_6	S_6	S_2	S_4	S_1	S_5	S_3
M_1	M_1	M_3	M_5	M_1	M_5	M_3
M_2	M_2	M_4	M_6	M_6	M_4	M_2
M_3	M_3	M_5	M_1	M_5	M_3	M_1
M_4	M_4	M_6	M_2	M_4	M_2	M_6
M_5	M_5	M_1	M_3	M_3	M_1	M_5
M_6	M_6	M_2	M_4	M_2	M_6	M_4

- i) $\text{Orb}(S_1) = (S_1, S_2, S_3, S_4, S_5, S_6)$
 ii) $\text{Orb}(S_2) = (S_1, S_2, S_3, S_4, S_5, S_6)$
 iii) $\text{Orb}(M_1) = (M_1, M_3, M_5)$