

These are precisely the elements found in (d). (21, 22) 4/4

2) a) H_1 is not a subgroup. It is not closed. For example, $da = f \notin H_1$.

H_2 is a subgroup. Its Cayley table is

\circ	e	c
e	e	c
c	c	e

H_3 is not a subgroup. It is not closed; it possesses the unfortunate property that no composite of its elements belongs to the group. It also does not contain the identity element.

H_4 is a ^{sub}group. Its Cayley table is

\circ	e	a	b	c	d	f
e	e	a	b	c	d	f
a	a	b	c	d	f	e
b	b	c	d	f	e	a
c	c	d	f	e	a	b
d	d	f	e	a	b	c
f	f	e	a	b	c	d

H_5 is a subgroup. Its Cayley table is

\circ	e	c	g	j
e	e	c	g	j
c	c	e	j	g
g	g	j	c	e
j	j	g	e	c

H_6 is not a subgroup. It is not closed. For example, $coi = l$.

b) $H = \{e, b, d\}$.
Its left cosets are given by

$$\begin{aligned} aH &= \{a, c, f\} \\ gH &= \{g, k, i\} \\ jH &= \{j, h, l\} \end{aligned}$$

and H itself \leftarrow NB

9/9