It's right cosets are given by

$Ha = \{a, c, f\}$

$Hg = \{g, i, k\}$

$Hj = \{j, l, h\}$

and H itself

$K = \{e, c, i, l\}$

It's left cosets are given by

$aK = \{a, d, j, g\}$

$bK = \{b, f, k, h\}$ and K NB

and it's right cosets are given by

$Ka = \{a, d, h, k\}$

$Kb = \{b, f, g, j\}$ and K

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c) The normal subgroup is the one for which its distinct right and left cosets are the same.

H is the normal subgroup

The quotient group is constructed by taking the subgroup and its' cosets as elements and filling in the entries. The identity is H.

∘	H	aH	gH	jH
H	H	aH	gH	jH
aH	aH	H	jH	gH
gH	gH	jH	aH	H
jH	jH	gH	H	aH

The table is completed using $xH \circ yH = (x \circ y)H$, reading the composites $x \circ y$ from the Cayley table in the question, then composing with H to find the coset formed.

The group is cyclic generated by gH. It is therefore isomorphic to any cyclic group of order 4 eg $(\mathbb{Z}_4, +_4)$

$gH = gH^1 \to 1^1$ or $gH \to 1$

$aH = gH^2 \to 1^2 = 2$ $aH \to 2$

$jH = gH^3 \to 1^3 = 3$ $jH \to 3$

$H = gH^4 \to 1^4 = 0.$ $H \to 0$

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