

SECTION 37

- The conjugate classes are $\{\rho_0\}, \{\rho_2\}, \{\rho_1, \rho_3\}, \{\mu_1, \mu_2\}, \{\delta_1, \delta_2\}$.
 - $8 = 2 + 2 + 2 + 2$
- T
 - F
 - T
 - T
 - F
- This is somewhat a matter of opinion.
- $24 = 1 + 6 + 3 + 8 + 6$

SECTION 38

- $\{(1, 1, 1), (1, 2, 1), (1, 1, 2)\}$
- No. $n(2, 1) + m(4, 1)$ can never yield an odd number for first coordinate.
- $2\mathbb{Z} < \mathbb{Z}$, rank $r = 1$

SECTION 39

- $a^2b^2a^3c^3b^{-2}, b^2c^{-3}a^{-3}b^{-2}a^{-2}$
 - $a^{-1}b^3a^4c^6a^{-1}, ac^{-6}a^{-4}b^{-3}a$
- 16
 - 36
 - 36
- 16
 - 36
 - 18
- Partial answer: $\{1\}$ is a basis for \mathbb{Z}_4 .
 - Yes
- A blob group on S is isomorphic to the free group $F[S]$ on S .

SECTION 40

- $(a : a^4 = 1); (a, b : a^4 = 1, b = a^2); (a, b, c : a = 1, b^4 = 1, c = 1)$. (Other answers are possible.)
- Octic group:

	1	a	a^2	a^3	b	ab	a^2b	a^3b
1	1	a	a^2	a^3	b	ab	a^2b	a^3b
a	a	a^2	a^3	1	ab	a^2b	a^3b	b
a^2	a^2	a^3	1	a	a^2b	a^3b	b	ab
a^3	a^3	1	a	a^2	a^3b	b	ab	a^2b
b	b	a^3b	a^2b	ab	1	a^3	a^2	a
ab	ab	b	a^3b	a^2b	a	1	a^3	a^2
a^2b	a^2b	ab	b	a^3b	a^2	a	1	a^3
a^3b	a^3b	a^2b	ab	b	a^3	a^2	a	1

Quaternion group: The same as the table for the octic group except that the 16 entries in the lower right corner are