

| With $n = 6$          | $k = 1$ | $k = 2$ | $k = 3$ | $k = 4$ | $k = 5$            |
|-----------------------|---------|---------|---------|---------|--------------------|
| $f(e) = \text{id}_A$  | 6       |         |         |         | $\binom{6}{5} = 6$ |
| $f(r) = T = (012345)$ | 0       |         |         |         | 0                  |
| $f(r^2) = T^2 =$      | 0       |         |         |         | 0                  |
| $f(r^3) = T^3 =$      | 0       |         |         |         | 0                  |
| $f(r^4) = T^4 =$      | 0       |         |         |         | 0                  |
| $f(r^5) = T^5 =$      | 0       |         |         |         | 0                  |
| $f(s) = S = (15)(24)$ | 2       |         |         |         | 2                  |
| $f(sr) = ST =$        | 0       |         |         |         | 0                  |
| $f(sr^2) = ST^2 =$    | 2       |         |         |         | 2                  |
| $f(sr^3) = ST^3 =$    | 0       |         |         |         | 0                  |
| $f(sr^4) = ST^4 =$    | 2       |         |         |         | 2                  |
| $f(sr^5) = ST^5 =$    | 0       |         |         |         | 0                  |
| Total                 | 12      | 36      | 36      | 36      | 12                 |
| Number of orbits      | 1       | 3       | 3       | 3       | 2                  |

**Question (d).** Prove that the amount of equivalence classes of elements of  $A$  with  $k = 6$  and  $n = 12$  equals 50.

With the same methodology as in Question (c) we can compute a table of  $|A^g|$ .

| With $n = 12$ , part 1                         | $k = 6$ |
|--|---------|
| $\text{id}_A$                                  |         |
| $T = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$   |         |
| $T^2 =$  |         |
| $T^3 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^4 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^5 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^6 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^7 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^8 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^9 = (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11)$ |         |
| $T^{10} =$                                     |         |
| $T^{11} =$                                     |         |