Example 1. \( K_{3,3,3} \)
\( k = 3, \ n = 3, \ p = 9, \ q = 27, \ C = \{1, 2, 4\}. \)
\( V_1 = \{0, 3, 6\}, \ V_2 = \{1, 4, 7\}, \ V_3 = \{2, 5, 8\}. \)
\( A_1 = \{(0, 1), (1, 2), (2, 3), (3, 4), (4, 5), (5, 6), (6, 7), (7, 8), (8, 0)\}, \)
\( A_2 = \{(0, 2), (1, 3), (2, 4), (3, 5), (4, 6), (5, 7), (6, 8), (7, 0), (8, 1)\}, \)
\( A_4 = \{(0, 4), (1, 5), (2, 6), (3, 7), (4, 8), (5, 0), (6, 1), (7, 2), (8, 3)\}. \)

Example 2. \( K_{1,1,1,1,1} (= K_5) \)
\( k = 5, \ n = 1, \ p = 5, \ q = 10, \ C = \{1, 2\}. \)
\( V_1 = \{0\}, \ V_2 = \{1\}, \ V_3 = \{2\}, \ V_4 = \{3\}, \ V_5 = \{4\}. \)
\( A_1 = \{(0, 1), (1, 2), (2, 3), (3, 4), (4, 0)\}, \)
\( A_2 = \{(0, 2), (1, 3), (2, 4), (3, 0), (4, 1)\}. \)

Example 3. \( K_{1,1,1,1} (= K_4) \)
\( k = 4, \ n = 1, \ p = 4, \ q = 6, \ C = \{1, 2\}. \)
\( V_1 = \{0\}, \ V_2 = \{1\}, \ V_3 = \{2\}, \ V_4 = \{3\}. \)
\( A_1 = \{(0, 1), (1, 2), (2, 3), (3, 0)\}, \)
\( A_2 = \{(0, 2), (1, 3)\}. \)

Example 4. \( K_{3,3,3,3} \)
\( k = 4, \ n = 3, \ p = 12, \ q = 54, \ C = \{1, 2, 3, 5, 6\}. \)
\( V_1 = \{0, 4, 8\}, \ V_2 = \{1, 5, 9\}, \ V_3 = \{2, 6, 10\}, \ V_4 = \{3, 7, 11\}. \)
\( A_1 = \{(0, 1), (1, 2), (2, 3), (3, 4), (4, 5), (5, 6), (6, 7), (7, 8), (8, 9), (9, 10), (10, 11), (11, 0)\}, \)
\( A_2 = \{(0, 2), (1, 3), (2, 4), (3, 5), (4, 6), (5, 7), (6, 8), (7, 9), (8, 10), (9, 11), (10, 0), (11, 1)\}, \)
\( A_3 = \{(0, 3), (1, 4), (2, 5), (3, 6), (4, 7), (5, 8), (6, 9), (7, 10), (8, 11), (9, 0), (10, 1), (11, 2)\}, \)
\( A_5 = \{(0, 5), (1, 6), (2, 7), (3, 8), (4, 9), (5, 10), (6, 11), (7, 0), (8, 1), (9, 2), (10, 3), (11, 4)\}, \)
\( A_8 = \{(0, 6), (1, 7), (2, 8), (3, 9), (4, 10), (5, 11)\}. \)

Note that we have half-classes \( A_2 \) and \( A_5 \) in Examples 3 and 4 respectively. All other classes in the examples above are full-classes.

As we shall see in the following sections, edge-graceful labeling for case (1) can be accomplished quite easily, while a little bit more work is needed for case (2). Before we present the labelings for these two cases, we will outline in the following section two labeling techniques that we will use.

3. Two Labeling Techniques

Each of the two labeling techniques is to be performed against a full-class of vertices.