

Procedure to produce some self-complementary graphs

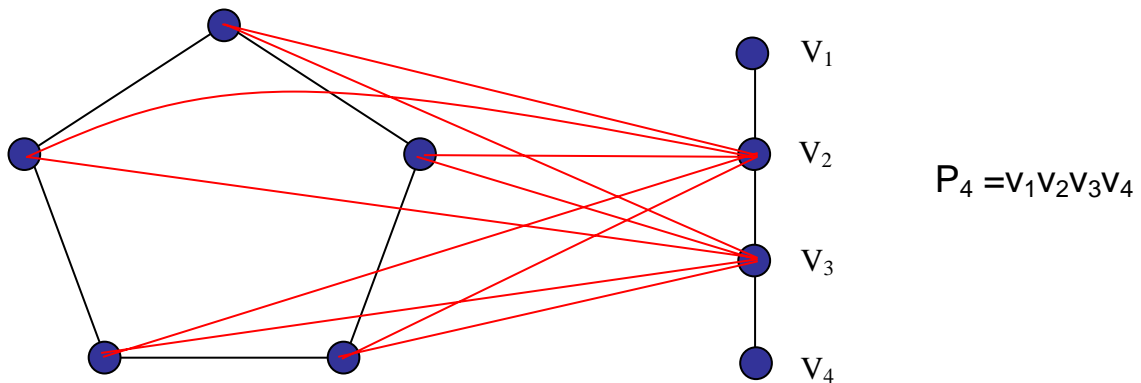
Step 1: Let H be any graph which is self-complementary, and let $P_4 = v_1v_2v_3v_4$ be a 4-path, i.e., a path with exactly four vertices.

Step 2: Join each of v_2 and v_3 to all vertices of H . We call this operation a **4-path addition**.

The **resulting graph** with $v(H) + 4$ vertices can easily be checked to **be self-complementary**. Thus, for each $n = 4k$, or $4k+1$, we can inductively construct self-complementary graphs with precisely n vertices.

Example:

Let H be C_5 . After the 4-path addition operation, we get a self-complementary graph of 9 vertices.



A self-complementary graph