1) ~~#~~ arista

$$\overline{K_{n,m}}$$

$$K_{n,m} \ \{ \underbrace{n, n, n, n, \ldots}_{m \text{ veces}}, \underbrace{m, m, m, m}_{n \text{ veces}} \}$$

$$K_{n+m} = \{ n+m-1, n+m-1, n+m-1, \ldots \}$$

$$\overline{K_{n,m}} = \{ \underbrace{m-1, m-1, m-1}_{m \text{ veces}}, \underbrace{n-1, n-1, \ldots}_{n \text{ veces}} \}$$

$$e = \frac{m(m-1) + n(n-1)}{2}$$

$$\overline{W_n} = \left\{ \begin{array}{l} K_{n+1} = \{ \underbrace{n, n, n, \ldots n}_{n+1 \text{ veces}} \} \\ \\ W_n = \{ \underbrace{3, 3, \ldots 3}_{n \text{ veces}}, n \} \\ \\ \overline{W_n} = \{ n-3, n-3, n-3, 0 \} \end{array} \right.$$

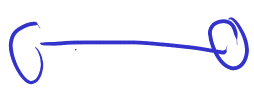
$$e = \frac{n(n-3)}{2}$$

$$C_n = \begin{cases} K_n = \{\overbrace{n-1,\ n-1,\ n-1,\ n-1 \ldots}^{n \text{ veces}}\} \\ C_n = \{\overbrace{2, 2, 2, \ldots 2}^{n \text{ veces}}\} \end{cases}$$

$$e = \frac{n(n-3)}{2}$$

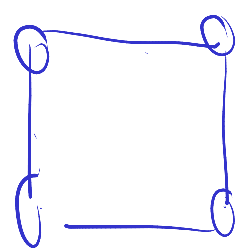
$$\overline{C_n} = \{\underbrace{n-3\ \ n-3\ \ \ldots\ n-3}_{n \text{ veces}}\}$$

2) Q_n



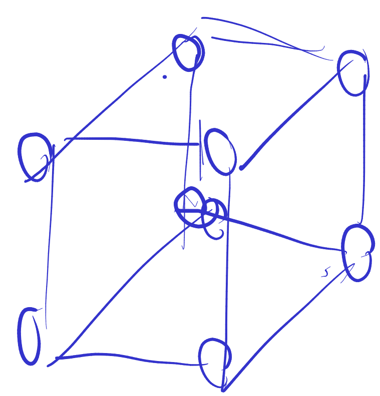
$n=1$

2 ver
1 art



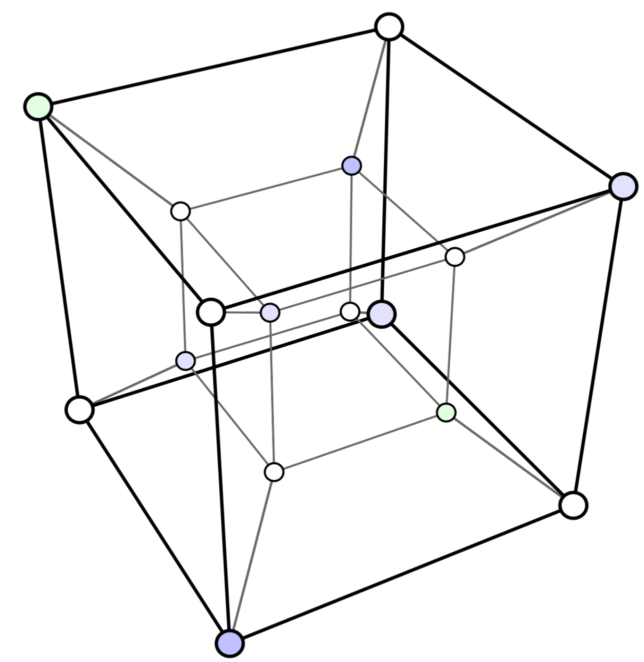
$n=2$

4 vertices
4 aristas



$n=3$

8 vertices
12 aristas



$n=4$

$V = 2^n$

$$e = \frac{n 2^n}{2}$$

$\overline{\Phi_n} =$

$$K_{2^n} = \{\underbrace{2^n-1,\ 2^n-1,\ 2^n-1,\ \ldots}_{2^n}\}$$

$$\Phi_n = \{\underbrace{n,\ n,\ n,\ \ldots\ n}_{2^n}\}$$

$$\overline{\Phi_n} = \{\underbrace{2^n-n-1,\ 2^n-n-1,\ 2^n-n-1,\ \ldots}_{2^n - \text{vpcb}}\}$$

$$e = \frac{2^n(2^n-n-1)}{2}$$

¿Existe un grafo regular con n vértices tal que sea autocomplementario?

Un grafo regular es aquel que todos el mismo grado.

Para que esto pase la secuencia de grade de G y G complemento deben ser iguales, por lo que debo tener en cuenta la secuencia de Kn

$$K_n = \{ n-1,\ n-1,\ n-1,\ n-1,\ \dots \}$$

$$G = \{ \underbrace{d,\ d,\ d,\ d,\ \dots}_{n \text{ veces}} \}$$

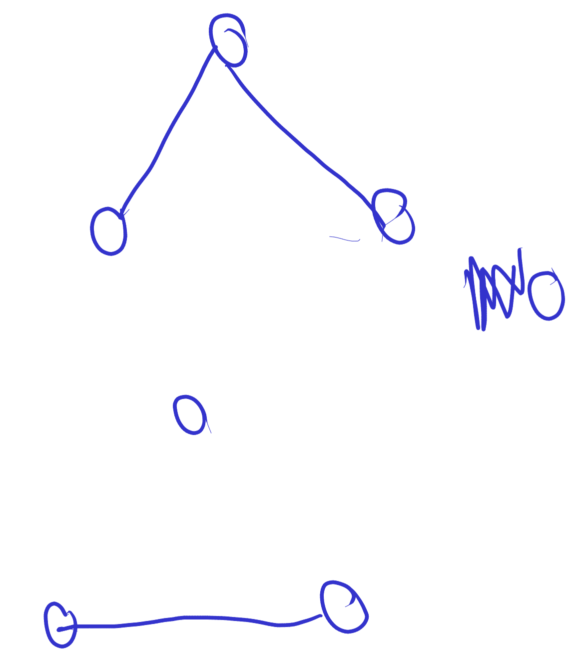
$$\overline{G} = \{ \underbrace{d,\ d,\ d,\ d,\ \dots}_{n \text{ veces}} \}$$

$$\boxed{n - 1 - d = d}$$

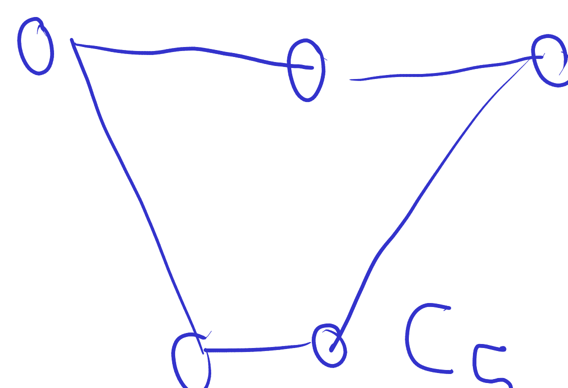
$$n - 1 = 2d$$

$$\boxed{n = 2d + 1}$$

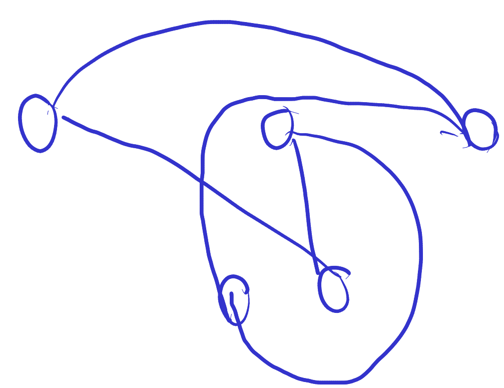
$$\underbrace{3}_{n=3} = 2(1) + \underbrace{1}_{d=1}$$



$$5 = 2(2) + 1$$

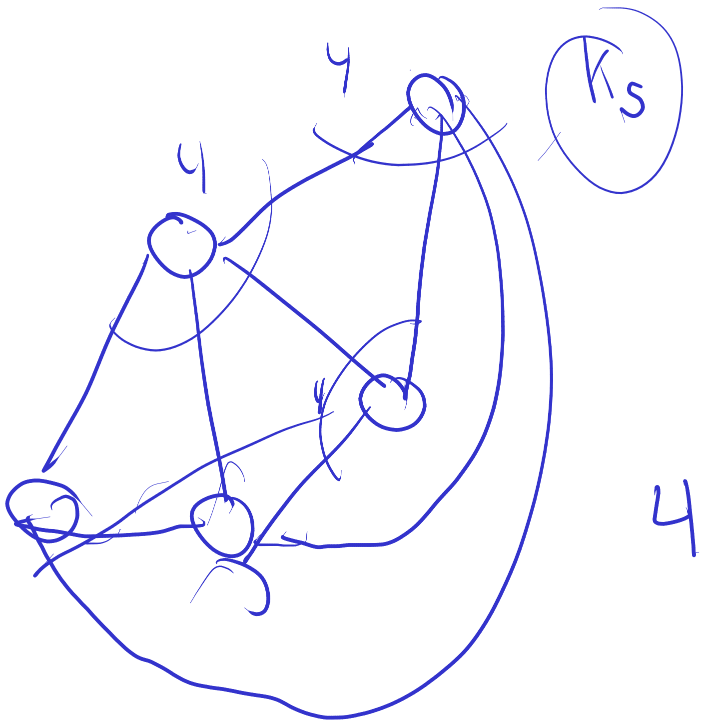


C_5



$\overline{C_5}$

Determinar el numero cromatico de un grafo regular 5 vertices con grado 4



$n = 4$

5 colores

$4 \times n$ par