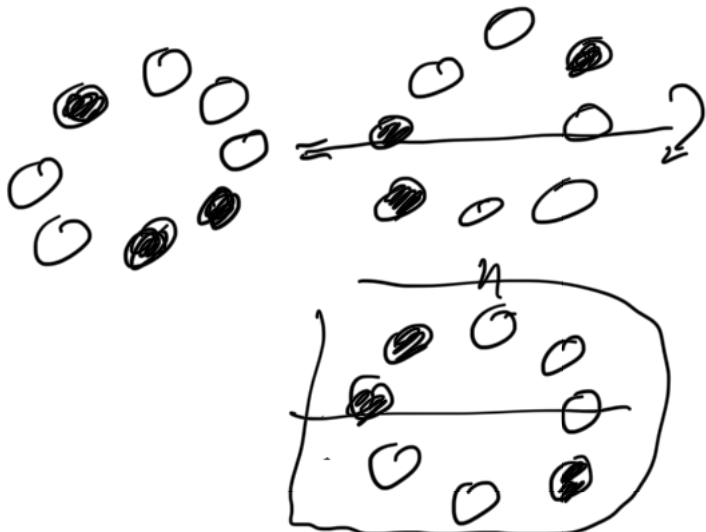


Nombre de colliers avec 5 perles blanches
et 3 perles noires



Collier : orogène régulier sur Pegul
agit le groupe D16

On veut compter modulo cette action,
c'est-à-dire les orbites.

On utilise le lemme de Burnside :

$X = \{ \text{other fxs are 5 B or 3N} \}$

$$G \cong D_{16} = \langle \sigma, \tau \rangle \quad \begin{array}{l} \sigma^8 = 1 \\ \tau^2 = 1 \end{array} \quad \tau\sigma = \sigma^{-1}\tau$$

$$e, \sigma, \dots, \sigma^7, \tau, \tau\sigma, \dots, \tau\sigma^7$$

$$\text{card}(X/G) = \frac{1}{|G|} \sum_{g \in G} \text{card}(X^g)$$

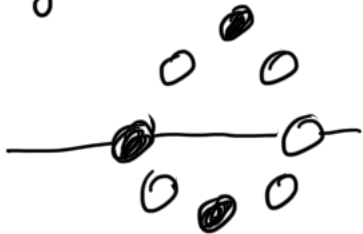
• $g = e$ $\text{card}(X^g) = \text{card } X = \binom{8}{3} = \frac{8 \times 7 \times 6}{3!}$
 $= 56$

• $g = \sigma, \sigma^2, \sigma^3, \sigma^4, \sigma^5, \sigma^6, \sigma^7$
 $\text{card}(X^g) = 0$

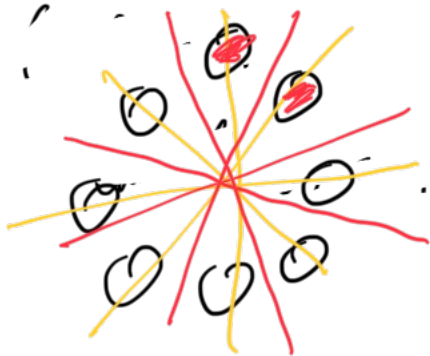




$\bullet \quad g = \tau$



$\swarrow$ boule noir en haut
 $3 \times 2 \nwarrow$ boule noir sur
 $\begin{matrix} 11 \\ 6 \end{matrix}$ l'axe



Jaune: 6

Orange: 0

$$\text{Card}(X/f) = \frac{1}{18} (52 + 7 \times 0 + 4 \times 6 + 4 \times 0) \\ = 5$$

