Redes Bayesianas: Grafo acíclico dirigido

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Bibliografía

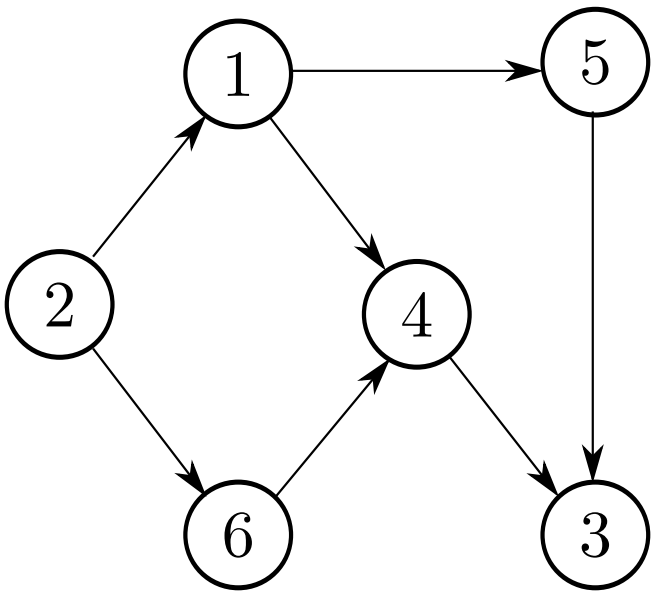
Castillo97: E. Castillo, J.M. Gutiérrez, y A.S. Hadi (1997). Sistemas Expertos y Modelos de Redes Probabilísticas. Academia de Ingeniería.

Grafo acíclico dirigido [Castillo97, Sec 4.4, p.124]

Formalismo

- Un grafo acíclico dirigido G es un par (V, E)
- $V = \{1, ..., n\}$ es el conjunto de **vértices**
- $E \subset \{(u, v) : u, v \in V, u \neq v\}$ es el conjunto de **arcos**
- No hay **ciclos dirigidos** en G

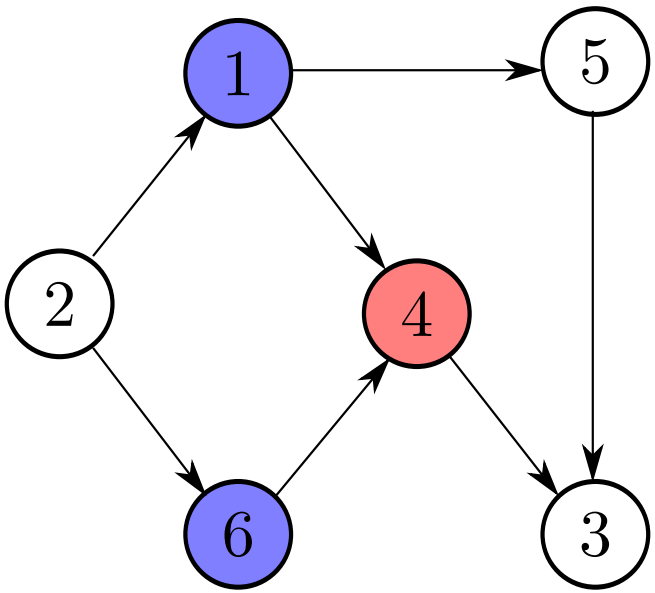
Ejemplo



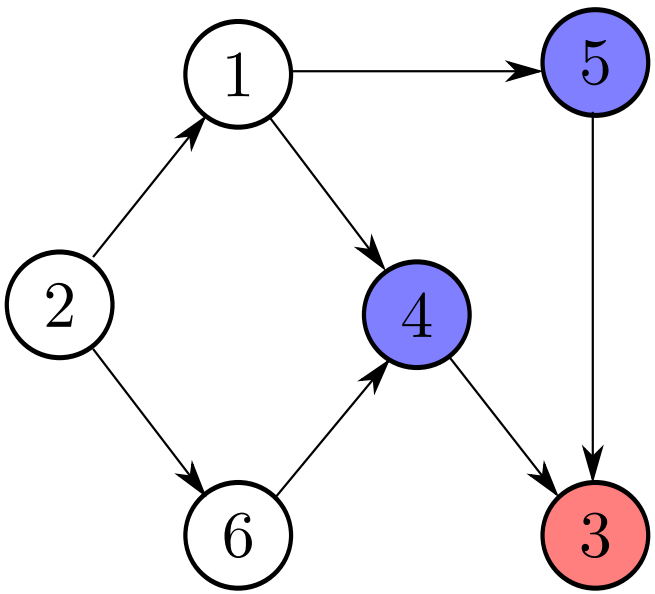
Conceptos

Padres, hijos, caminos, ancestros, orden ancestral, subgrafo, grafo moralizado

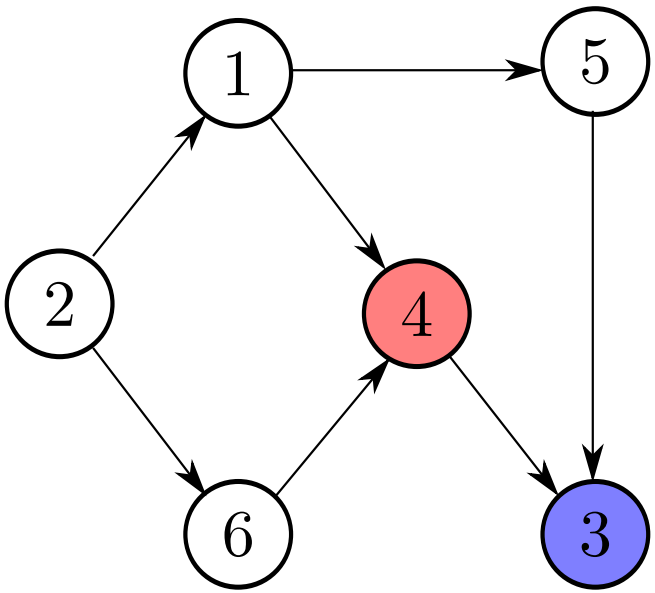
Padres



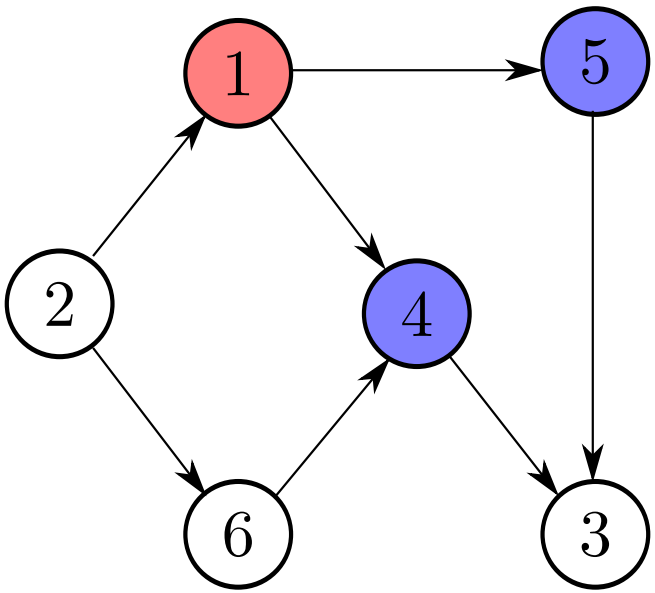
Padres



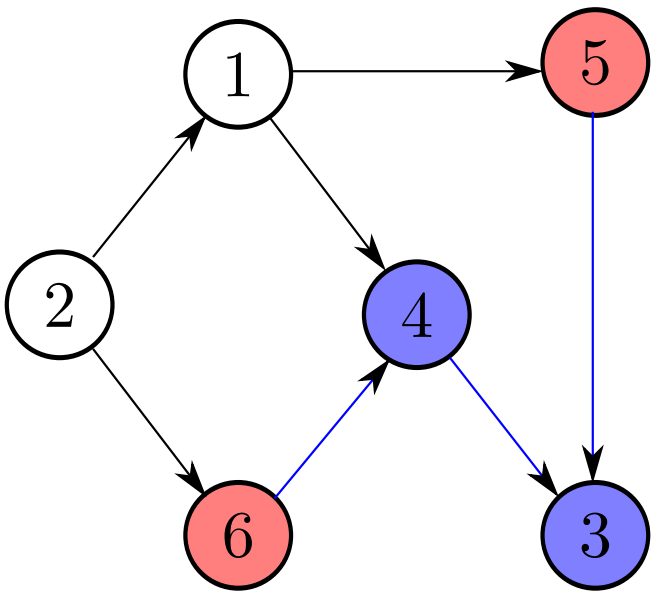
Hijos



Hijos



Caminos



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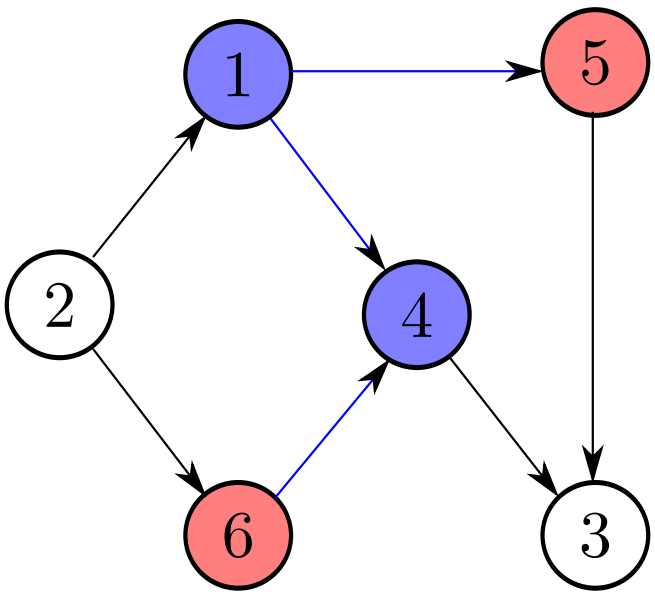

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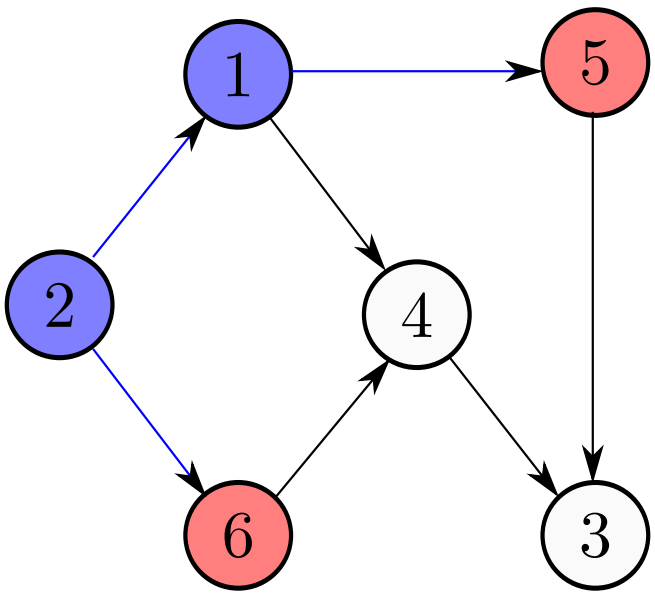
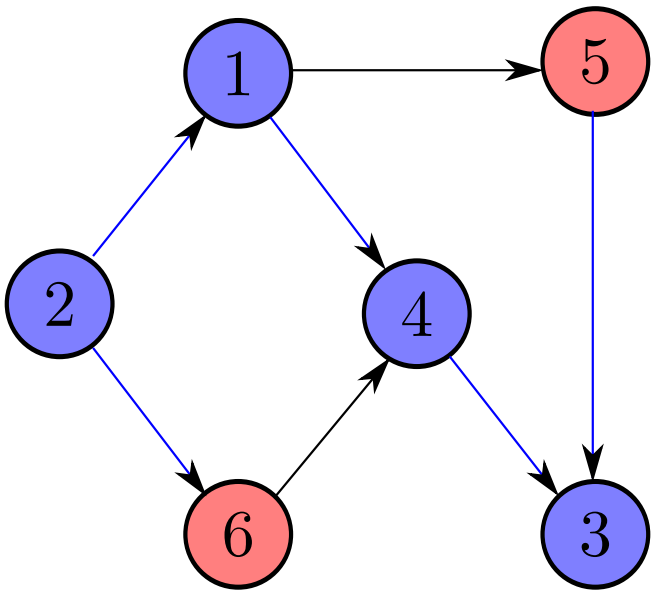
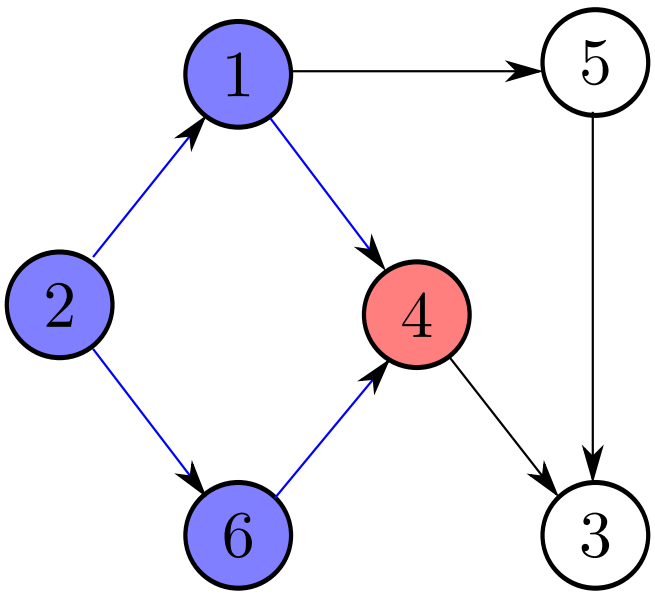


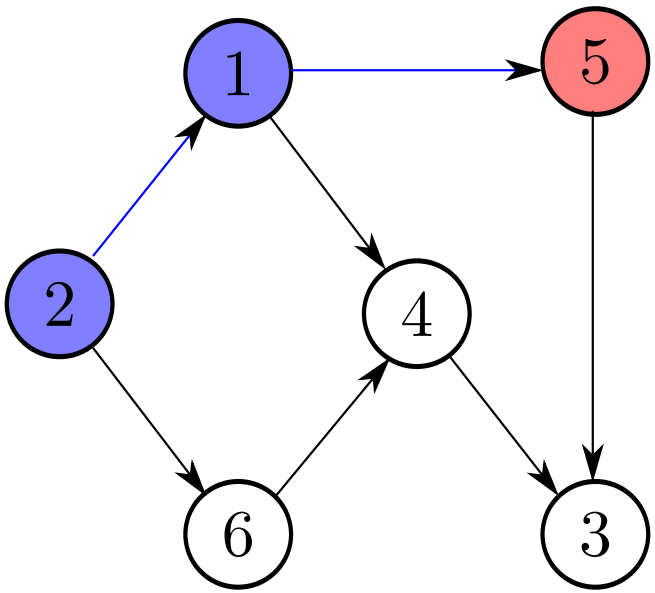
Caminos



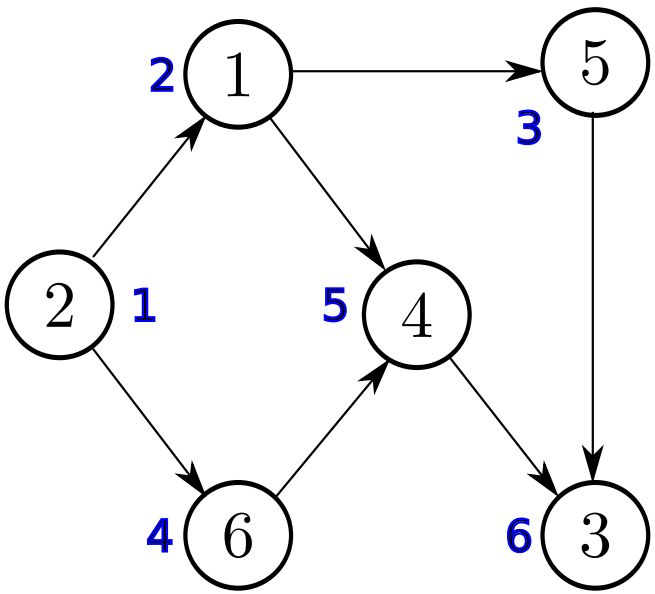
Conjunto ancestral



Conjunto ancestral



Orden ancestral



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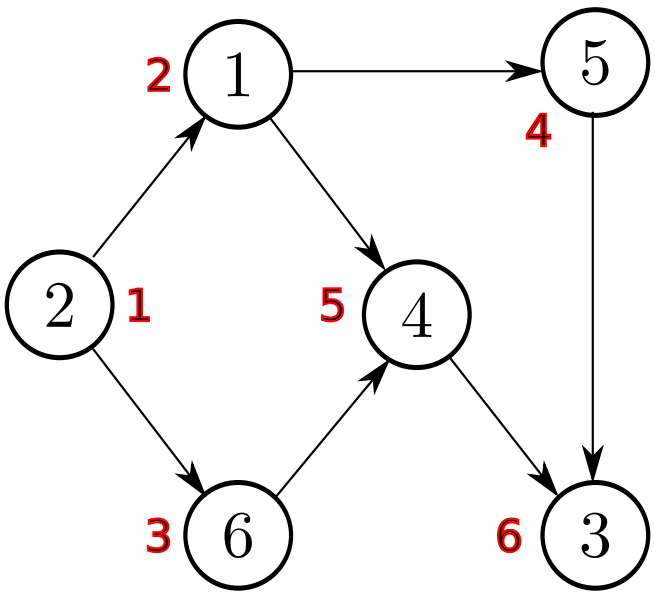
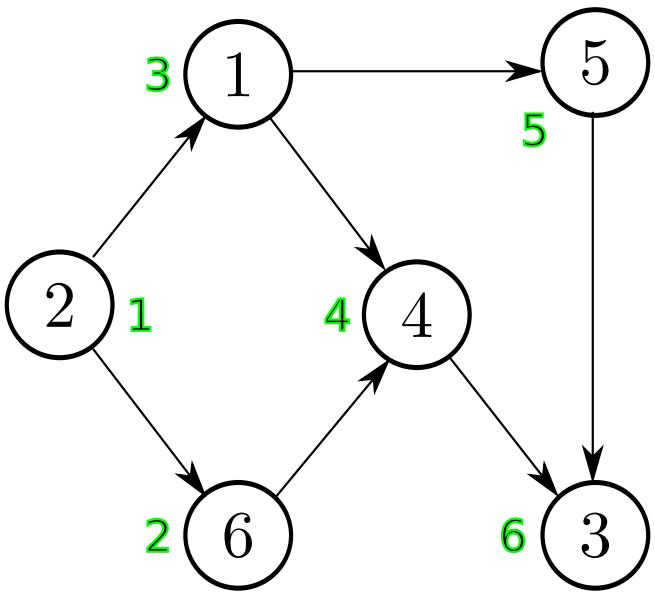
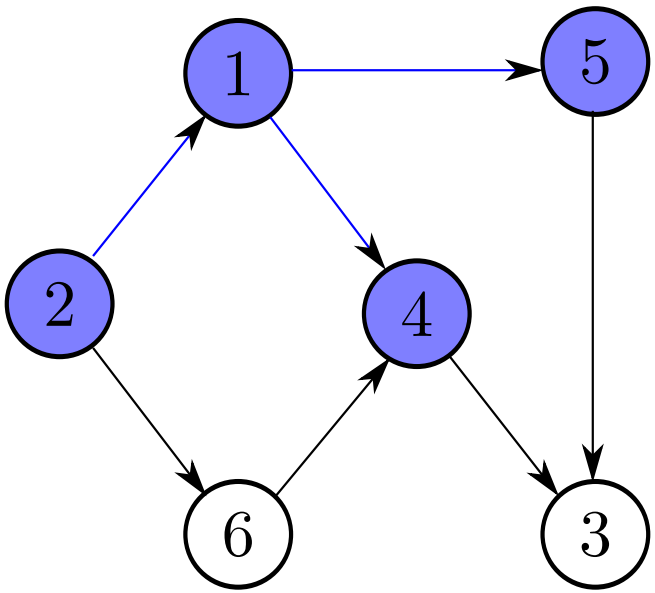


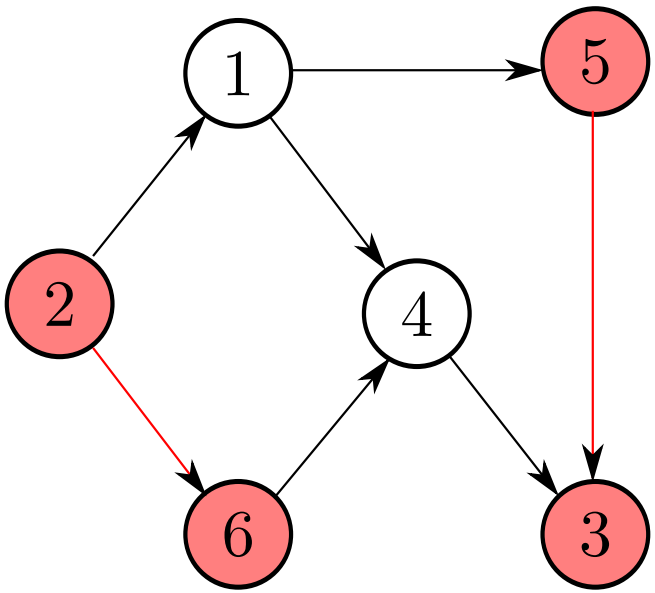
Orden ancestral



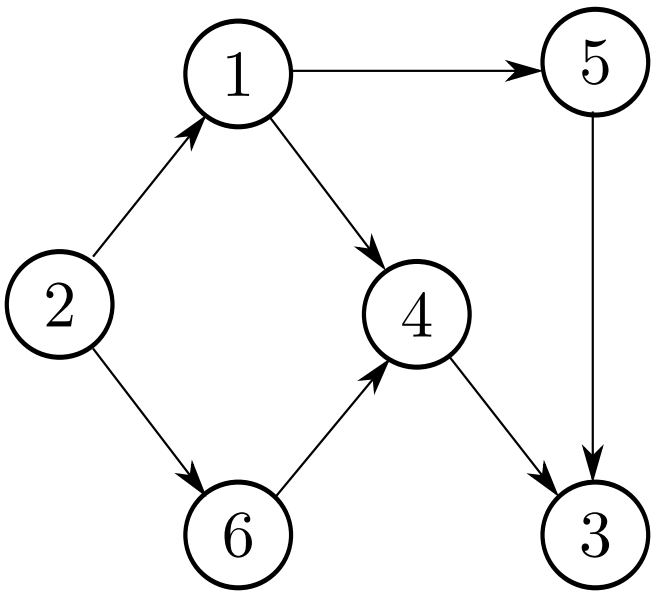
Subgrafo inducido



Subgrafo inducido



Grafo moralizado



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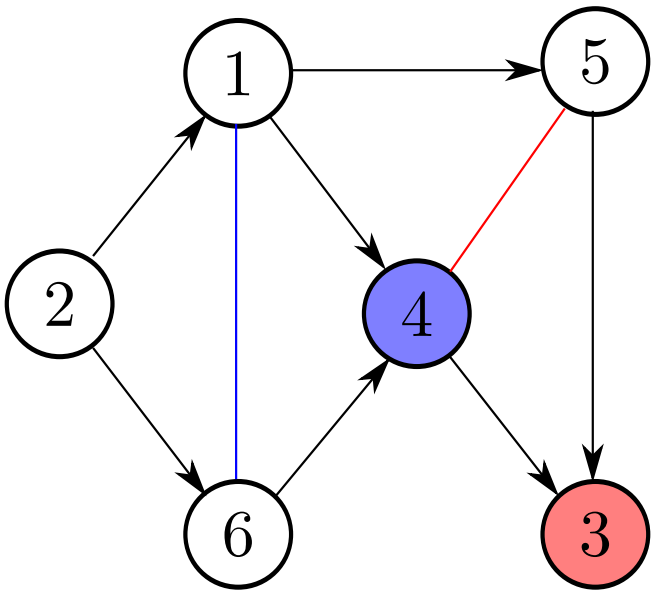

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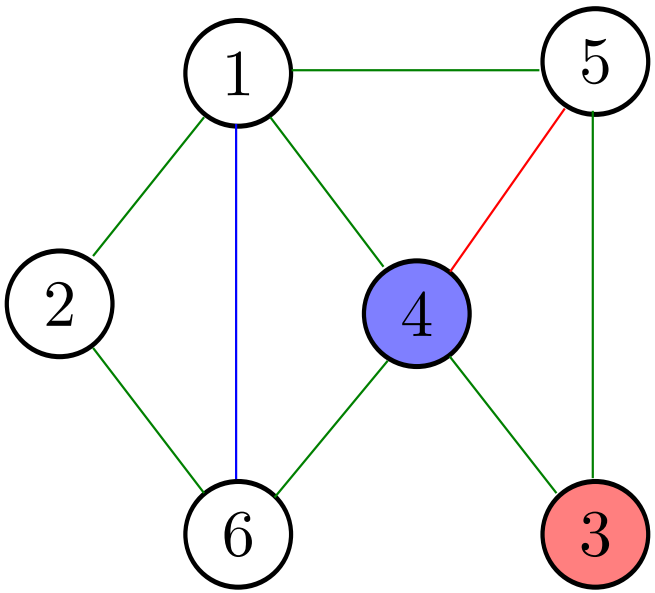

Para qué sirven?

- Soporte gráfico de las **redes Bayesianas**
- Determinan su **factorización**
- Determinan su **modelo de dependencia**: criterio de separaciónn gráfica