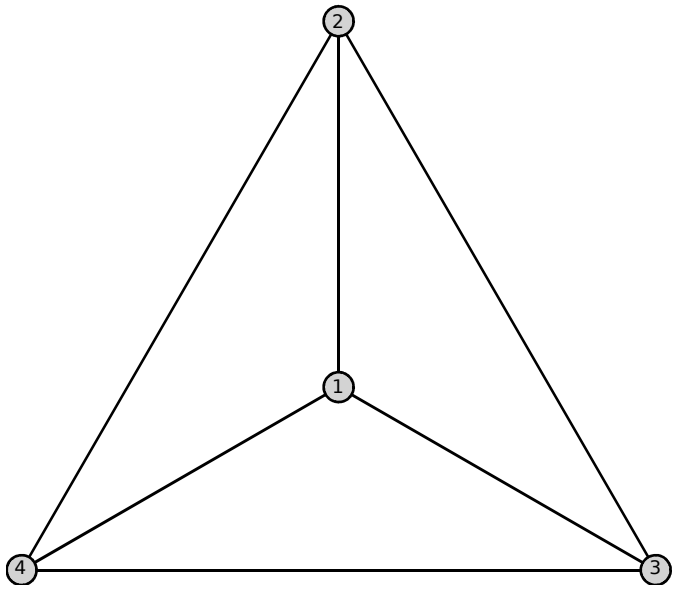
```
> with(GraphTheory):
> P := CompleteGraph(4)
```

$$P := \text{Graph 8: an undirected unweighted graph with 4 vertices and 6 edge(s)} \quad \textbf{(1)}$$

```
> DrawGraph(P)
```




```
> IsPlanar(P)
```

$$\text{true} \quad \textbf{(2)}$$

```
> IsEulerian(P)
```

$$\text{false} \quad \textbf{(3)}$$

```
> IsHamiltonian(P,'T')
```

$$\text{true} \quad \textbf{(4)}$$

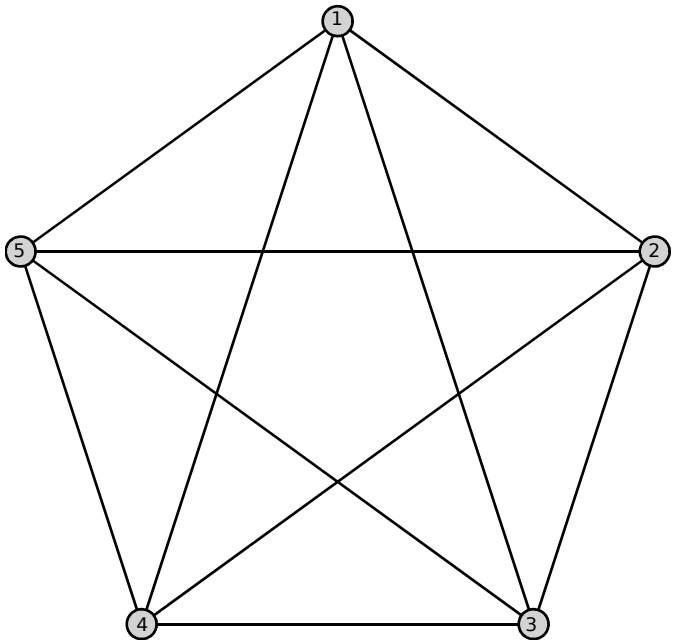
```
> T
```

$$[1, 2, 3, 4, 1] \quad \textbf{(5)}$$

```
> N := CompleteGraph(5)
```

$$N := \text{Graph 11: an undirected unweighted graph with 5 vertices and 10 edge(s)} \quad \textbf{(6)}$$

```
> DrawGraph(N)
```



> *IsPlanar*(*N*)

false **(7)**

> *IsEulerian*(*N*,'*T*')

true **(8)**

> *T*

Trail(1, 2, 3, 1, 4, 2, 5, 3, 4, 5, 1) **(9)**

> *IsHamiltonian*(*N*,'*H*')

true **(10)**

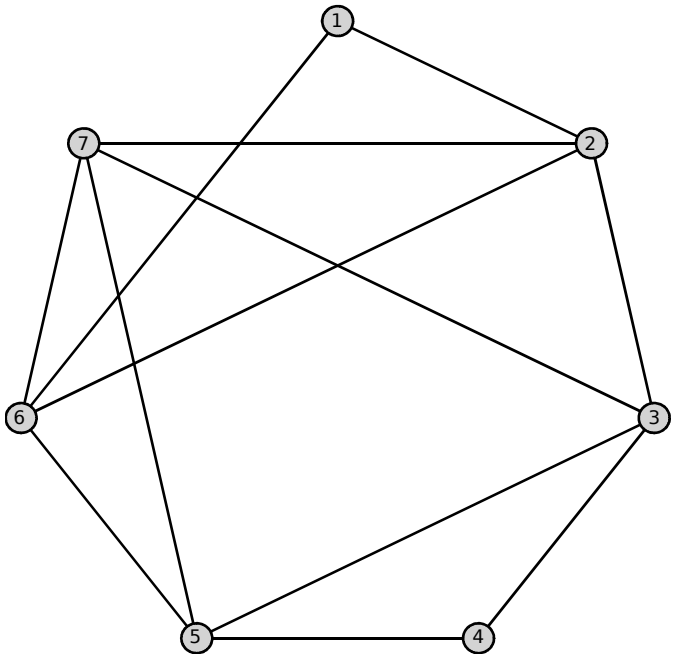
> *H*

[1, 2, 3, 4, 5, 1] **(11)**

> *E* := *Graph*({{1, 2}, {1, 6}, {2, 6}, {2, 3}, {2, 7}, {3, 7}, {3, 5}, {3, 4}, {4, 5}, {5, 7}, {5, 6}, {6, 7}})

E := *Graph 19: an undirected unweighted graph with 7 vertices and 12 edge(s)* **(12)**

> *DrawGraph*(*E*)



> *IsEulerian*(*E*,'*T*')

true **(13)**

> *T*

Trail(1, 2, 3, 4, 5, 3, 7, 2, 6, 5, 7, 6, 1) **(14)**

> *IsHamiltonian*(*E*,'*H*')

true **(15)**

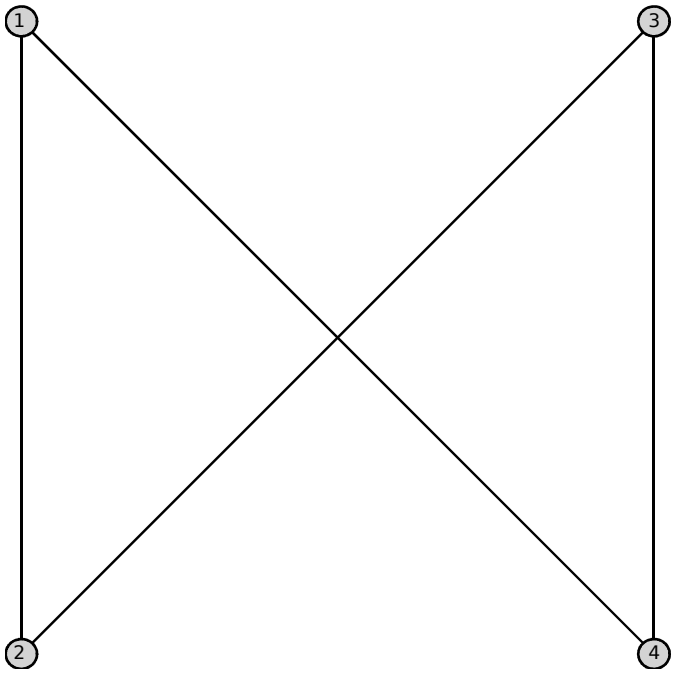
> *H*

[1, 2, 3, 4, 5, 7, 6, 1] **(16)**

> $H := Graph(\{\{1, 2\}, \{2, 3\}, \{3, 4\}, \{4, 1\}\})$

H := *Graph 22: an undirected unweighted graph with 4 vertices and 4 edge(s)* **(17)**

> *DrawGraph*(*H*)




```
> IsHamiltonian(H,'T')
```

true **(18)**

```
> T
```

[1, 2, 3, 4, 1] **(19)**

```
>
```