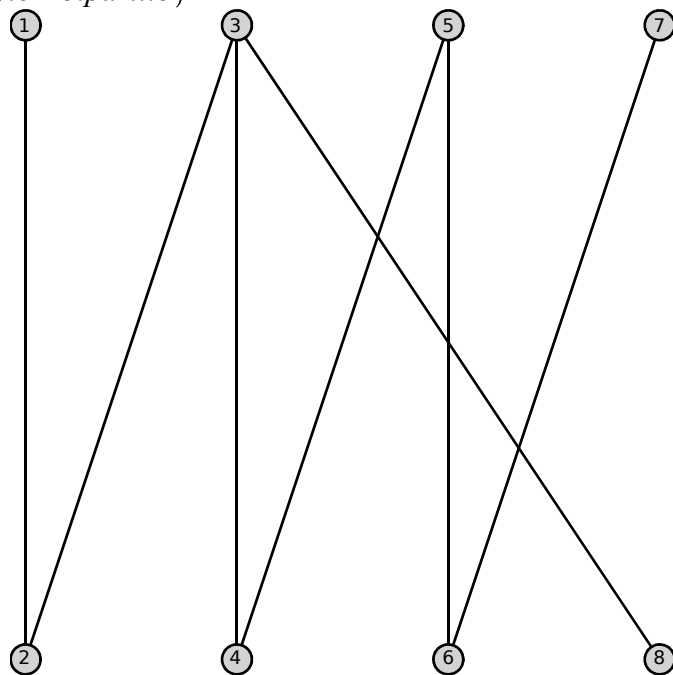


```
> with(GraphTheory) :
> G := Graph( {{1, 2}, {2, 3}, {3, 4}, {3, 8}, {4, 5}, {5, 6}, {6, 7}})
      G := Graph 2: an undirected unweighted graph with 8 vertices and 7 edge(s) (1)
```

```
> B := BipartiteMatching(G)
      B := 4, {{1, 2}, {3, 8}, {4, 5}, {6, 7}} (2)
```

```
> DrawGraph(G, style = bipartite)
```



```
> ChromaticNumber(G)
      2 (3)
```

```
> HighlightVertex(G, {1, 3, 5, 7}, red)
```

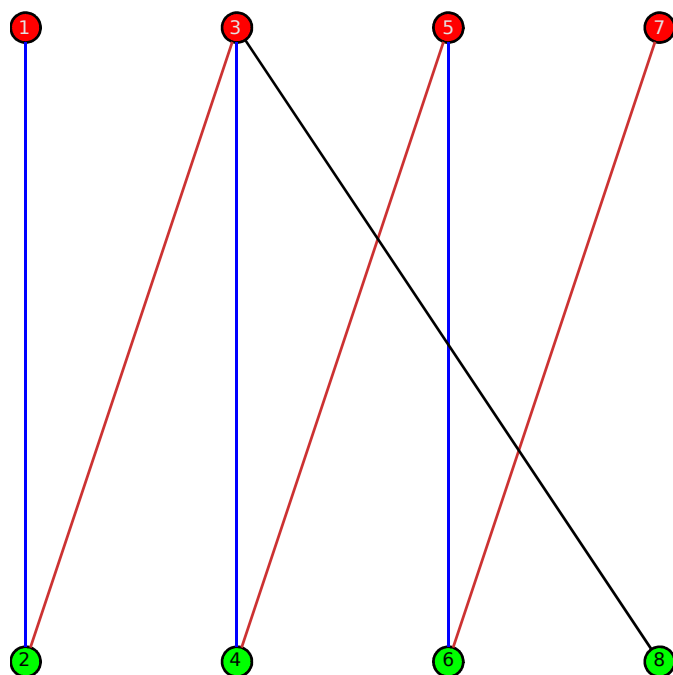
```
> HighlightVertex(G, {2, 4, 6, 8}, green)
```

```
> EdgeChromaticNumber(G)
      3 (4)
```

```
> HighlightEdges(G, {{1, 2}, {3, 4}, {5, 6}}, blue)
```

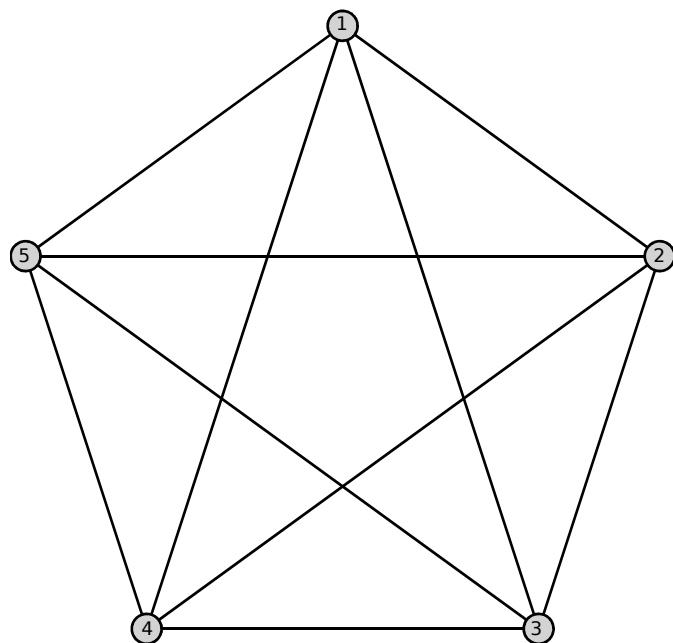
```
> HighlightEdges(G, {{2, 3}, {4, 5}, {6, 7}}, orange)
```

```
> DrawGraph(G, style = bipartite)
```



```
> with(GraphTheory) :
> G0 := CompleteGraph(5)
    G0 := Graph 3: an undirected unweighted graph with 5 vertices and 10 edge(s)
> DrawGraph(G0)
```

(5)



```
> ChromaticNumber(G0)
```

5

(6)

```
> HighlightVertex(G0, 1, green)
> HighlightVertex(G0, 2, blue)
> HighlightVertex(G0, 3, black)
> HighlightVertex(G0, 4, red)
> HighlightVertex(G0, 5, orange)
```

> *EdgeChromaticNumber*(*G0*)

5

(7)

> *HighlightEdges*(*G0*, {{1, 2}, {3, 5}}, *green*)

> *HighlightEdges*(*G0*, {{2, 3}, {1, 4}}, *blue*)

> *HighlightEdges*(*G0*, {{3, 4}, {2, 5}}, *black*)

> *HighlightEdges*(*G0*, {{4, 5}, {1, 3}}, *red*)

> *HighlightEdges*(*G0*, {{5, 1}, {2, 4}}, *gray*)

> *DrawGraph*(*G0*)

