## A new application

## Bipartite (also called "2-colorable")

A graph is bipartite (also called 2-colorable) if the vertex set can be divided into two sets $V_{1}, V_{2}$ such that the only edges go between $V_{1}$ and $V_{2}$.

Called "2-colorable" because you can "color" $V_{1}$ red and $V_{2}$ blue, and no edge connects vertices of the same color.


## If a graph contains an odd cycle, then it is not bipartite.

Try the example on the right, then proving the general theorem in the light purple box.

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