## 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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