L28 12 April 2022

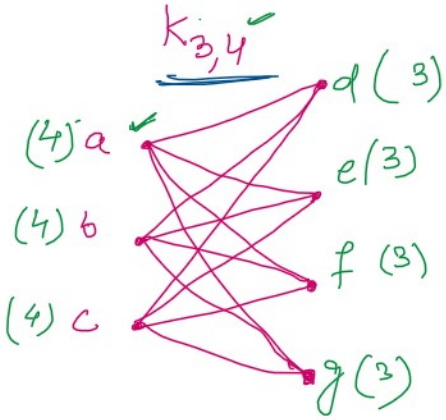
12 April 2022 11:09

In $K_{m,n}$ the no. of edges

$\sum deg(v) = 2e$

$m(n) + n(m) = 2e$

$K_{mn} = \frac{1}{2}e \Rightarrow$ $e = mn$



For what value of m and n, $K_{m,n}$ contains an Euler circuit?

(a) $m = n$ (b) $m = n =$ even. (c) $m =$ even, $n =$ even (d) All values (e) No. value

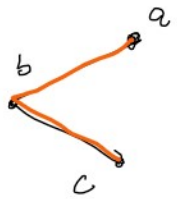
$deg(v) =$ even

In $K_{m,n}$ $m =$ even, $n =$ even

For what value of m and n, $K_{m,n}$ contains an Euler path but not circuit?

deg_a (exactly 2 vertices) = odd and rest all even.

$K_{1,2}$



$K_{2,3}$

$K_{2,5}$ $K_{2,7}$, $K_{2,9}$ $K_{2,11}$

$K_{m,n}$

either m or n = 2 and other is an odd no.

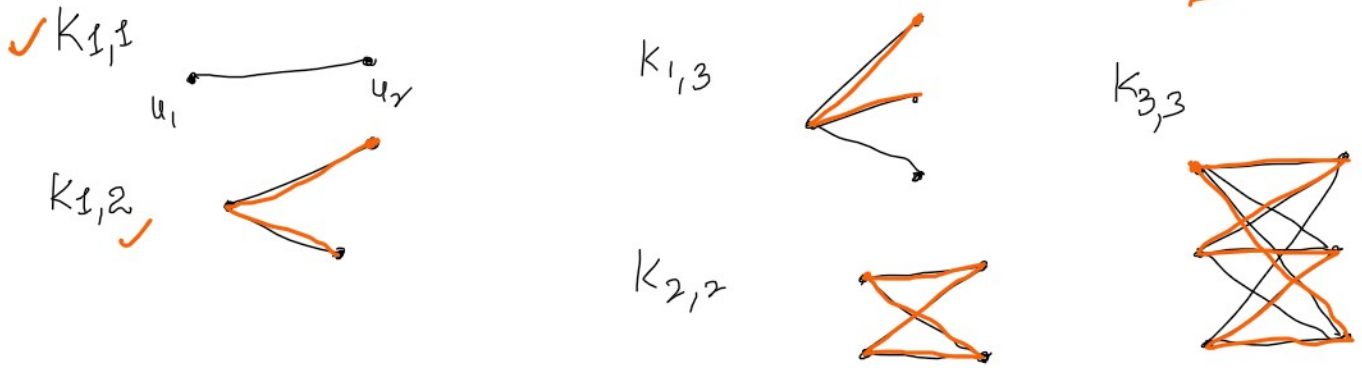
$K_{1,2}$ and $K_{2,odd}$

odd ≠ 1

For what value of m and n, $K_{m,n}$ contains an Hamiltonian circuit?

(a) all values (b) $m=n$ ~~(c) $m=n(\neq 1)$~~ (d) No value of m and n.

(e) None of these

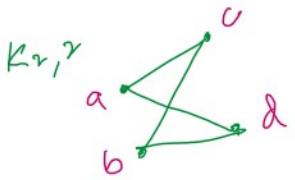


For what value of m and n, $K_{m,n}$ is regular?

$m=n$

For what value of m and n, $K_{m,n}$ is Complete?

No value of m and n except $K_{1,1}$

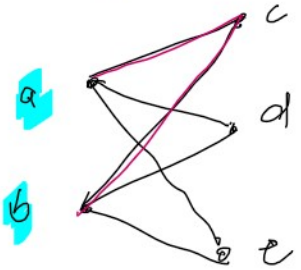


maximum distance b/w any pair of vertex
↳ length of the shortest path

The diameter of $K_{m,n}$ is

(a) 1 (b) 2 (c) m (d) n (e) None of these.

$K_{2,3}$



$d(a,b)$

The diameter of $K_m = 1$

J e