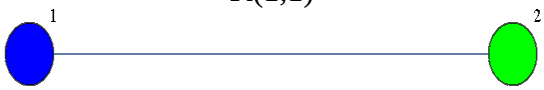
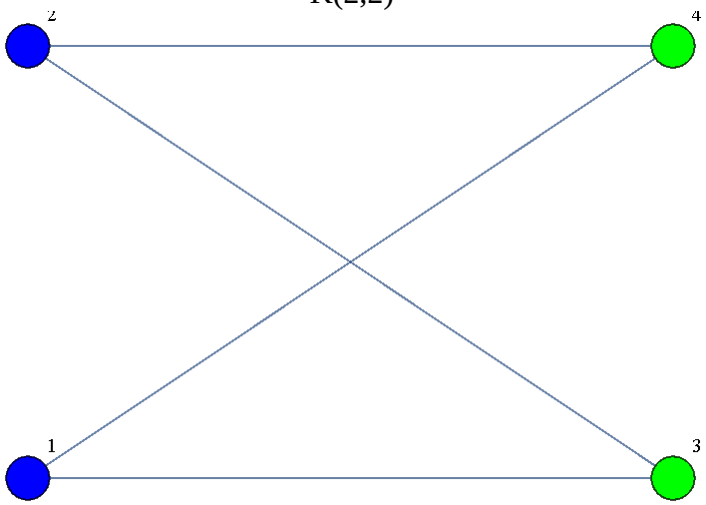
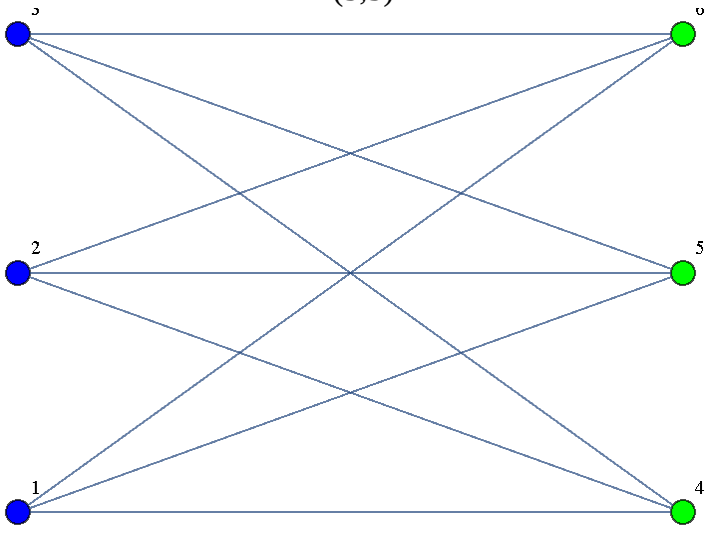
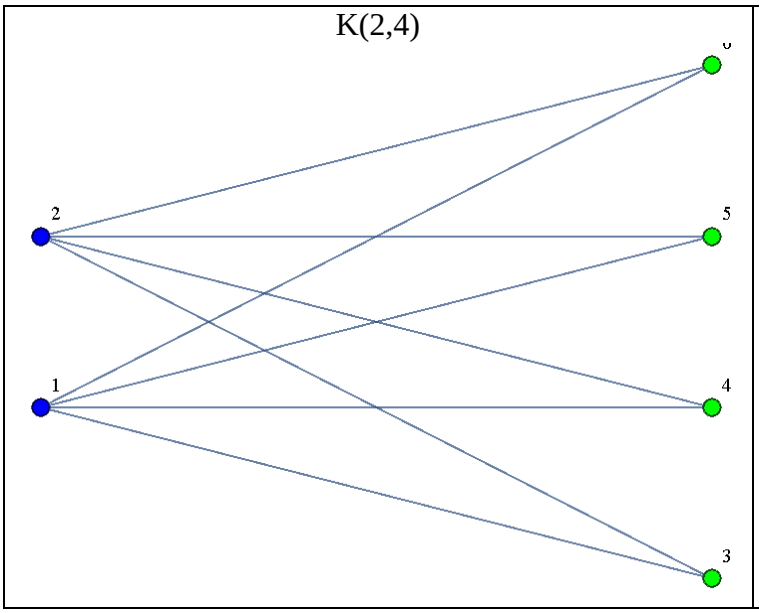
K(1,1)  	K(1,1) CompleteGraph[{1, 1}, VertexStyle -> {1 -> Blue, 2 -> Green}, VertexSize -> Small, VertexLabels -> "Name"] Crossing Edges: 0
K(2,2)  	K(2,2) CompleteGraph[{2,2},VertexStyle->{1->Blue,2->Blue,3->Green,4->Green},VertexSize->Small,VertexLabels->"Name"] Crossing Edges: 1
K(3,3)  	K(3,3) CompleteGraph[{3,3},VertexStyle->{1->Blue,2->Blue,3->Blue,4->Green,5->Green,6->Green},VertexSize->Small,VertexLabels->"Name"] Crossing Edges: 7

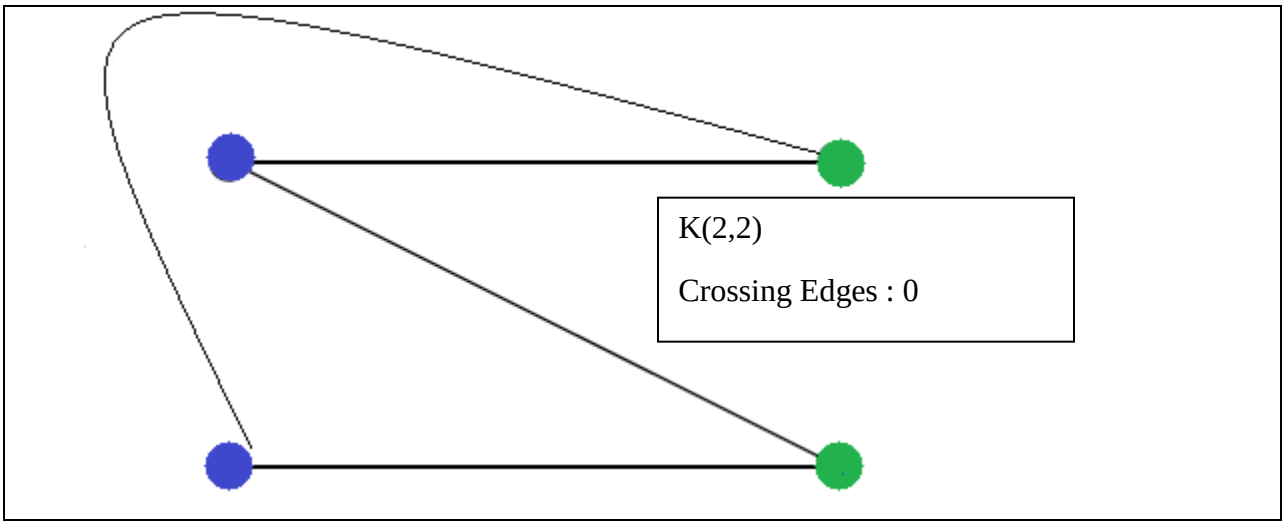


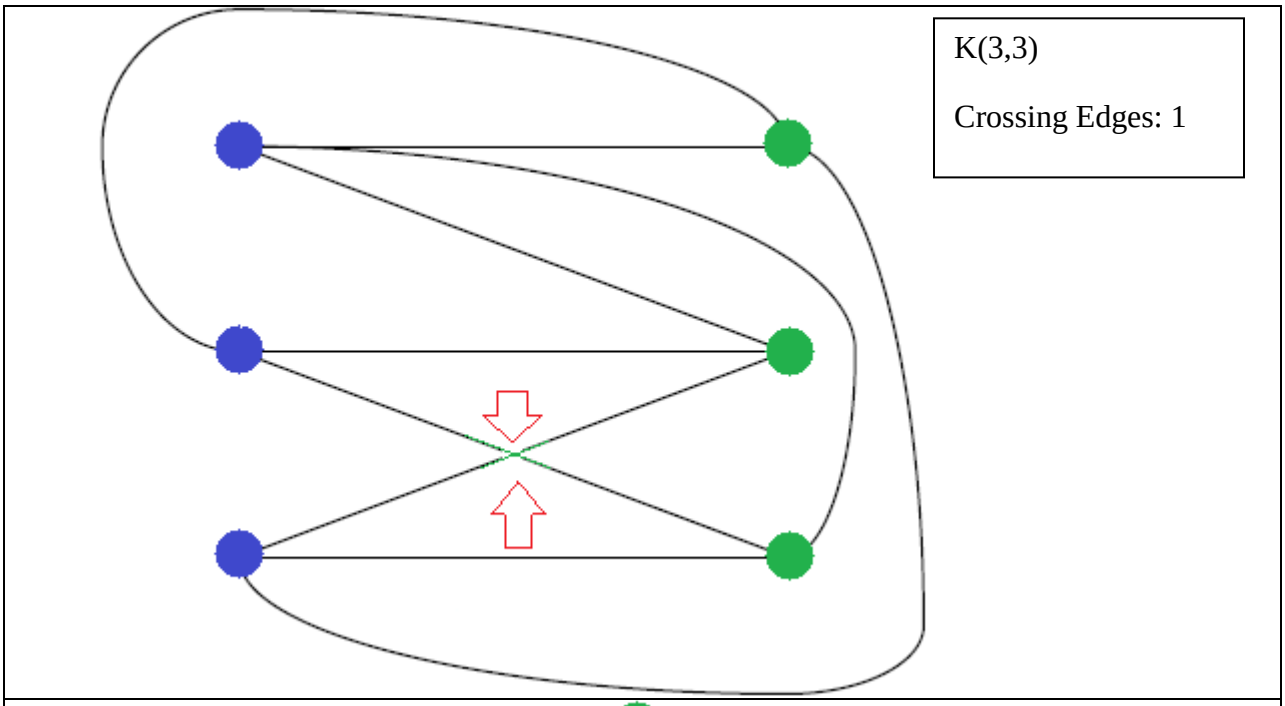
K(2,4)

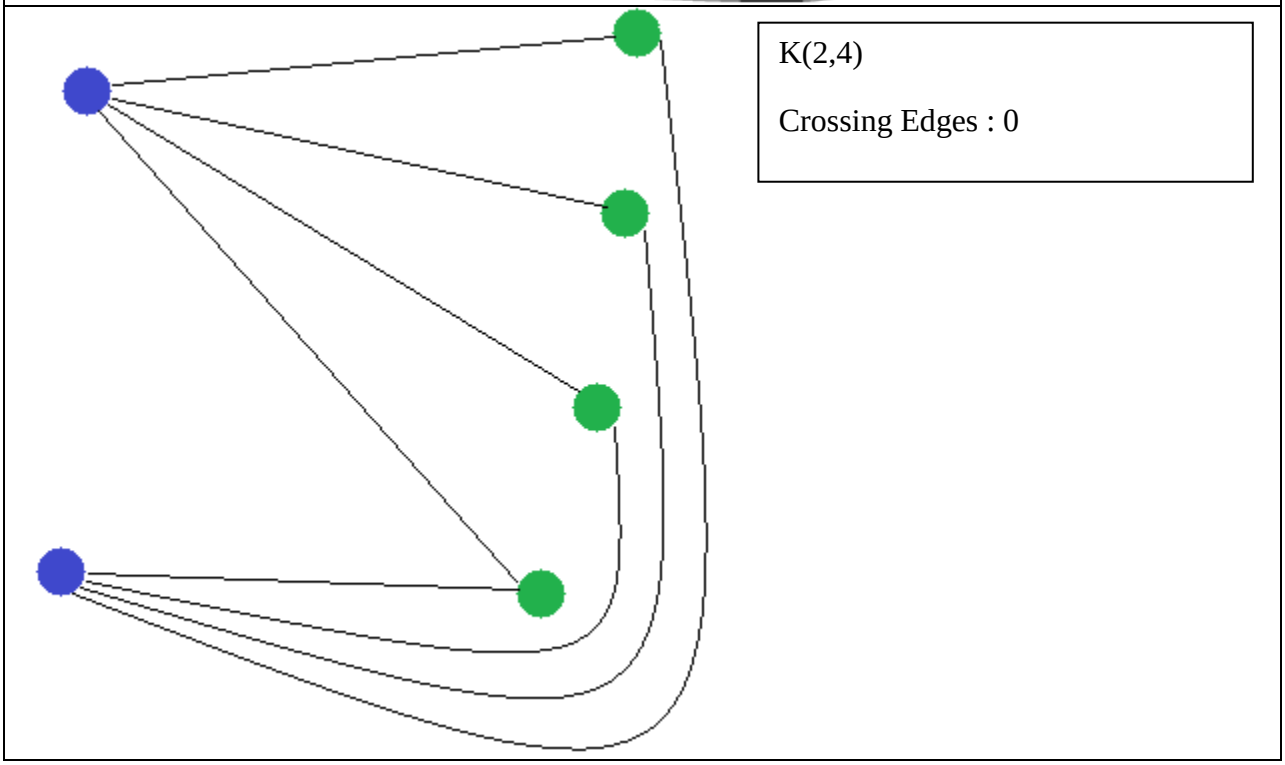
CompleteGraph[{2,4},VertexStyle->{1->Blue,2->Blue,3->Green,4->Green,5->Green,6->Green},VertexSize->Small,VertexLabels->"Name"]

Crossing Edges: 6

Above we have the graphs of multiple different functions using the mathematica program. The program combines the vertices of both independent sets of dots (blue and green) in the simplest of forms not worrying about the number of crossing edges. Below I will illustrate how I personally redrew each graph to see if I could get less crossing edges. The only one not being illustrated will be the graph of K[1,1] because it already doesn't have any crossing edges.







After redrawing the graphs I realized it doesn't really matter whether we set up our graphs with a K(m,n) or K(n,n) function we can always simplify them to have less crossing edges.