1. Yes, by the demolition of the bridge and route given below.

2. Here is an example of such a tour.

Observe that on an odd board there will always be one more square of one colour (say black) than the other, and a knight will always move from a square to a square of the other colour. Hence one can never find a knight’s tour on an odd board since to get to all the squares once you would need to move

\[ BWBWBW \ldots WB \]

but there is no way to return from a black square to a black square without visiting an already visited white square.

3. 

\[ ((4t - 5w)(x + y))(((2x + 1) + y + (3 + 5(w^2))) + (y + (w + z))). \]

4. Here is one such coloring.
5. No. Here is a counter-example.

6. First note that if $G$ is a simple graph on $n$ vertices then the maximum degree of a vertex is $n - 1$, and this vertex must be connected to every other vertex.

Now we do a proof by contradiction. Assume that the $n$ vertices of $G$ each have different degree, then by our above observation the degrees of the vertices must be $0, 1, 2, \ldots, n - 1$. However the vertex of degree $n - 1$ must be connected to every other vertex, and hence no vertex of degree 0 can exist, which is a contradiction.