Applied Combinatorics Quiz 2

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True-False:

T 1. There is a graph G with $\omega(G) = 2$ and $\chi(G) = 100$.

T 2. There is a graph G with $\omega(G) = 3$ and $\chi(G) = 100$.

F 3. There is a planar graph G with $\omega(G) = 2$ and $\chi(G) = 100$.

F 4. If $\chi(G) = 3$, then G is perfect.

T 5. There is a perfect graph with 240 vertices and 1024 edges.

F 6. There is a poset with 4215 points having width 79 and height 39.

T 7. There is a poset with 4215 points having width 97 and height 93.

F 8. When $n \geq 3$, the shift graph S_n contains a triangle.

F 9. When $n \geq 2$, the shift graph S_n has $C(n, 3)$ vertices.

F 10. When $n \geq 2$, the shift graph S_n has $C(n, 2)$ edges.