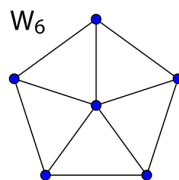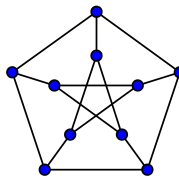# Planar graphs
Math 4707, Spring 2021

1. The *wheel graph* W_n on n vertices is obtained from the cycle graph C_{n-1} on $(n-1)$ vertices by adding a new vertex adjacent to every other vertex; for instance W_6 looks like:

   Show that W_n is always self-dual.

2. Recall that the Petersen graph is

   Find a subgraph of the Petersen graph that's a subdivision of $K_{3,3}$. Conclude that the Petersen graph is not planar. Can you find a subgraph of the Petersen graph that's a subdivision of K_5?

3. Show that the planar graphs corresponding to the icosahedron and dodecahedron are dual: