Warmup

Which of the following exist?

1. An Euler path on $K_4$
2. An Euler circuit on $K_{2,4}$
3. A Hamilton path on $C_6$
4. A Hamilton cycle on $P_5$

How many faces, edges and vertices does a planar drawing of $K_4$ have?

How many faces, edges and vertices does a cube have?

Tests for Planarity

A kingdom has 5 cities. The king orders the royal engineer to find a way to put a road between every pair of cities so that no two roads fork or intersect. Can the engineer get the job done?
Subdivisions

What do the following two graphs have in common? How are they different?

In what way is $C_5$ more similar to $C_{11}$ than to $P_5$?