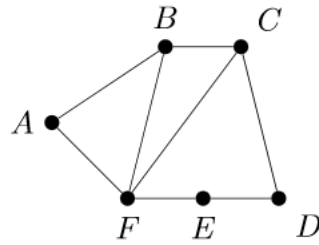
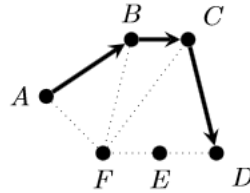


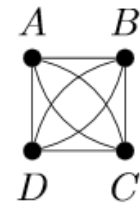
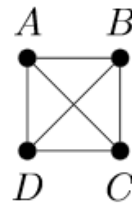
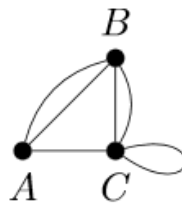
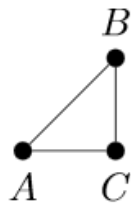
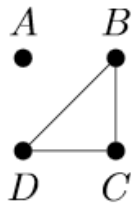
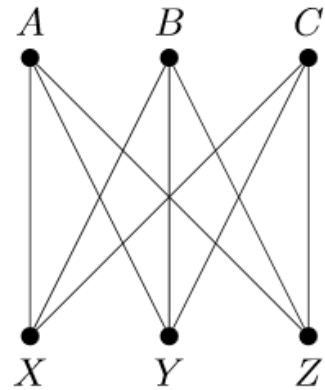
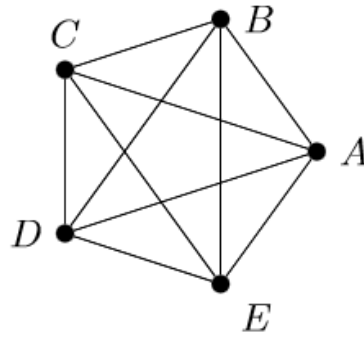
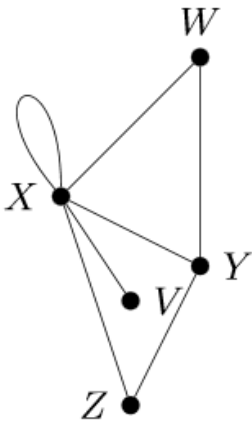
How many different paths are there from A to D in the following graph (without repeating any vertices)? Find them all (suggestion: use a tree).



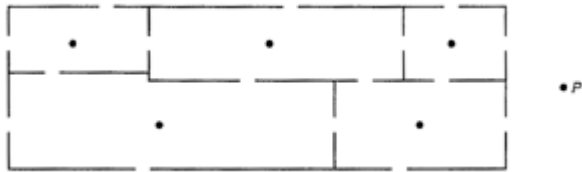
For example, one path is $ABCD$, as shown:



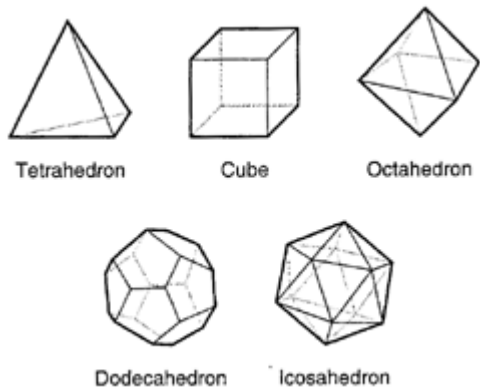
For the following graphs, decide which have Euler paths; which are simple; which are complete; and which are planar:



Can you pass through each door exactly once, without passing through any door twice?



For which of the Platonic solids can you cross each edge exactly once, without crossing any edge twice?



Draw the octahedron as a planar graph.

How many two-way relationships are possible in a group of 8 people? What graph should you consider?