

**Solution** (#1014) Pick a vertex  $v_1$ . We then proceed on a walk  $v_1v_2v_3\dots$  from  $v_1$  in such a way that the edge  $v_iv_{i+1}$  is never a retracing of the edge  $v_{i-1}v_i$  just taken. This is possible as every vertex has degree at least 2. As the graph is finite then a vertex,  $v_n$  say, must at some point be repeated so that  $v_1\dots v_n$  is a circuit. By taking the first occasions that  $v_i = v_j$  where  $i < j$  then we have a cycle  $v_i\dots v_j$ .