Christian Schindelhauer   Freiburg, 19 Jan 2007
                                                    Due until 23 Jan 2007

Exercises of lecture
Wireless Sensor Networks
Winter 2006/2007

Sheet 10

SECTION 1:
Topology control

1. Draw a finite connected graph which is **not** c-spanner for any c.
   Answer: Eevery finite connected graph is c-spanner for some value of c. Hence such a graph does not exist.

2. Draw a finite connected graph which is also **not** even weak c-spanner for any c.
   Answer: Eevery finite connected graph is weak c-spanner for some value of c. Hence such a graph does not exist.

3. Draw a five nodes connected graph which is 1-spanner.
   Answer: Connect all the five nodes in a straight line where distances between nodes may or may-not be equal.

4. Use the points below to draw a graph which is *Delaunay triangle*. Furthermore specify missing coordinates.
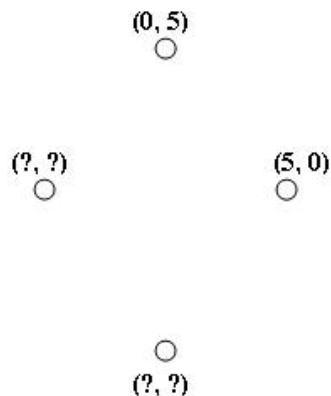
   Answer: Depending on the selection of missing coordinates there exist multiple solution for this question. We provide one such solution in the following diagram.
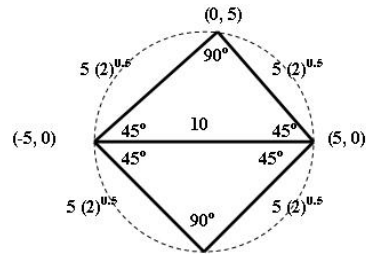
5. Draw *(2, 2)-power-spanner graph* that consists of exactly 10 nodes, also specify distances between nodes.

   Answer: Draw a Gabriel graph consisting of 10-nodes it will be a power spanner graph too. We are not giving solution of this question because it has multiple answers and for examples of Gabriel grpah look at exercise-12 solution.