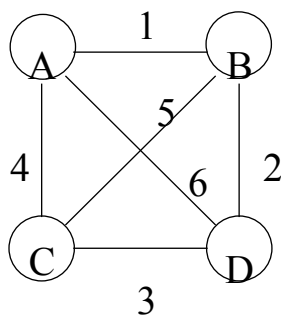**TSP Worksheet**

1. Show all possible TSP tours in the graph and compute their cost; for example, one TSP tour is A−B−C−D−A and its cost is 1 + 5 + 3 + 6 = 15.

   ABCDA = 15, BACDB = 10, CABDC = 10, DABCD = 15

   ABDCA = 10, BADCB = 15, CADBC = 17, DACBD = 17

   ACBDA = 17, BCADB = 17, CBADC = 15, DBACD = 10

   ACDBA = 10, BCDAB = 15, CBDAC = 17, DBCAD = 17

   ADCBA = 15, BDACB = 17, CDABC = 15, DCABD = 10

   ADBCA = 17, BDCAB = 10, CDBAC = 10, DCBAD = 15

2. How many distinct tours are there when you account for the same tour being counted multiple times?

$$\frac{n!}{n} = \frac{(n-1)!}{2} = \frac{3!}{2} = 3$$