3 city ; A, B, C $\frac{(3-1)!}{2} = \frac{2!}{2} = 1$

1 tour

4 city : A, B, C, D $\frac{(4-1)!}{2} = \frac{3!}{2} = 3$

3 tour

A B C D
A B D C
A C B D

5 city A B C D E $\frac{(5-1)!}{2} = \frac{4!}{2} = 12$

P, Q, R, S, T : total 12

(PQ) R S T
(PQ) R T S
(PQ) S R T

QP R S T
QP R T S
QP S R T

PQ & PR

~~(PQ) R S T~~
~~(PQ) R T S~~
~~(PQ) S R T~~

QP R S T ✓
QP R T S ✓
~~QP S R T~~

PQ, PR, ~RS

QP R T S

PQ, ~PR

④

(PQ) R S T
(PQ) R T S
(PQ) S R T

~~QP R S T~~
~~QP R T S~~
QP S R T

PQ, ~PR, ~RS

~~(PQ) R S T~~
(PQ) R T S
~~(PQ) S R T~~

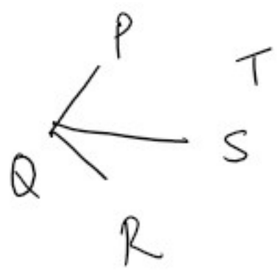
~~QP R S T~~
~~QP R T S~~
~~QP S R T~~

PQ R S T
~~PQ R T S~~
~~PQ S R T~~
~~QP R S T~~
~~QP R T S~~
~~QP S R T~~

Same tour if started with PT

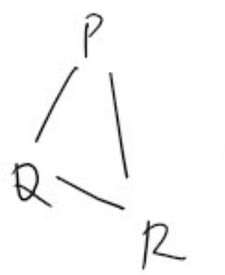
PQRST

PQ, RQ, QS



Invalid

PQ, RQ, PR



Invalid