Assignment 9

The due date for submitting this assignment has passed. As per our policy you have not submitted this assignment.

Due on 2019-10-02, 23:59 IST.

1. There are six cities (n=6) in a district. The district must determine where to build fire stations. The district wants to build the minimum number of fire stations to ensure that fire can be delivered to any part of the district in 30 minutes or less. Two fire stations are required to deliver fire in the district within 10 minutes, but the time to travel between cities is different. Time required to travel between cities depends on the distance between the cities.

   City 1 City 2 City 3 City 4 City 5 City 6
   City 1 0 15 30 45 60 75
   City 2 15 0 30 45 60 75
   City 3 30 30 0 45 60 75
   City 4 45 45 45 0 60 75
   City 5 60 60 60 60 0 75
   City 6 75 75 75 75 75 0

   a. Minimize Z = x1 + x2 + x3 + x4 + x5 + x6
   b. Maximize Z = x1 + x2 + x3 + x4 + x5 + x6
   c. Maximize Z = x1 + x2 + x3 + x4 + x5 + x6

2. We wish to develop a stable portfolio wherein we maximize return and minimize risk, we would have to use:
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)

   Accepted Answers: 
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)
   - Value at Risk (VaR)

3. The problem's description:
   - The problem's description:
   - The problem's description:
   - The problem's description:
   - The problem's description:
   - The problem's description:

   Accepted Answers: 
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above

4. Selecting an integer programming problem by ranking off answers obtained by solving it as a linear programming problem (solving it using Simplex), we find that:
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above

   Accepted Answers: 
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above

5. An efficient set of portfolios represented through graph is classified as a:
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above
   - Some of the above

   Accepted Answers: 
   - Efficient frontier
   - Efficient frontier
   - Efficient frontier
   - Efficient frontier
   - Efficient frontier

6. In quadratic programming, we have:
   - Some of the above
   - Some of the above
   - Some of the above

   Accepted Answers: 
   - Some of the above
   - Some of the above
   - Some of the above

7. In the context of Markowitz mean-variance portfolio optimization the role of transaction cost is that it is the price we pay (now) to:
   - Some of the above
   - Some of the above
   - Some of the above

   Accepted Answers: 
   - Some of the above
   - Some of the above
   - Some of the above

8. A good insight to a smooth function and a Hessian matrix as discussed in quadratic programming are:
   - Some of the above
   - Some of the above
   - Some of the above

   Accepted Answers: 
   - Some of the above
   - Some of the above
   - Some of the above