* 1. B
  2. A
  3. D
  4. D
  5. D
  6. A
  7. B
  8. A
  9. C
  10. C

2

Answer:

AX, BY, CZ

3

Answer:

A->C->D->E->F (total cost is 20)

4

Answer:

If we apply earliest-start-time first for the interval scheduling problem, we will not get optimal solution, the counterexample is:

A picture containing timeline

Description automatically generated

If we apply earliest-start-time, we will get, a and g, only two jobs, but if we apply earliest-finish-time, we will get, g,e and h, which three jobs.

If we apply earliest-finish-time for interval partition problem, we will not get optimal solution, the counterexample is:

In a minimum number of classroom case, if we using earliest-finish-time, we will not get the optimal solution, but we can get if we apply earliest-start-time.

5

Answer:

First, sort the workers based on their value (wage / quality) rate, and then we find the minimum possible total quality of K workers.

Since Cost = wage \* total quality / quality.

We calculate the group cost by using above equation.

Then, handle the rest of the workers, remove the worker with the highest quality from the list, add in new best-value worker.

This will keep track of best-value and maintain optimal total cost.