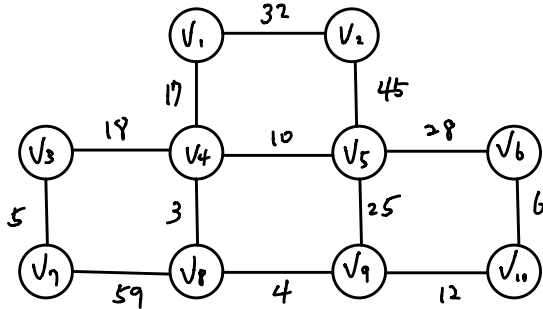
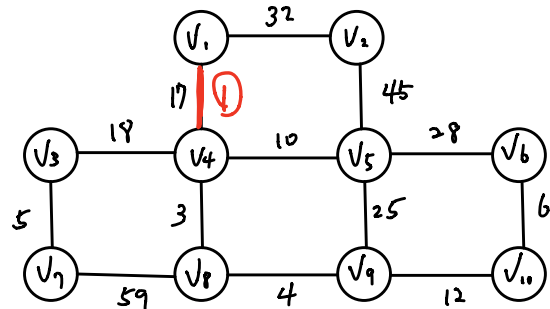


2.

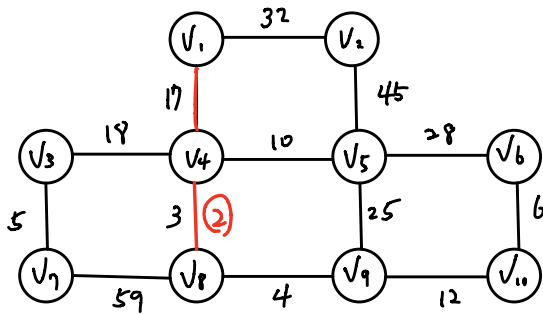
1. Find the minimum tree



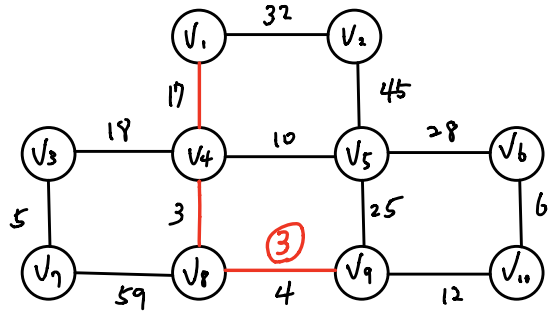
2.  $\{V_1, V_4\}$



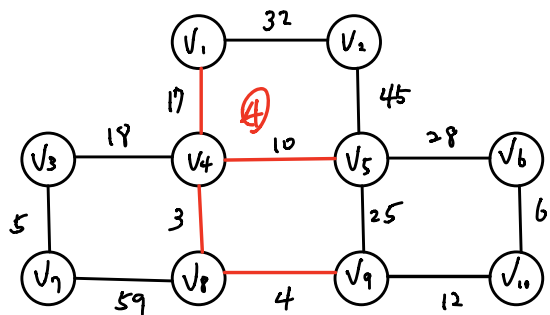
3.  $\{V_1, V_4, V_8\}$



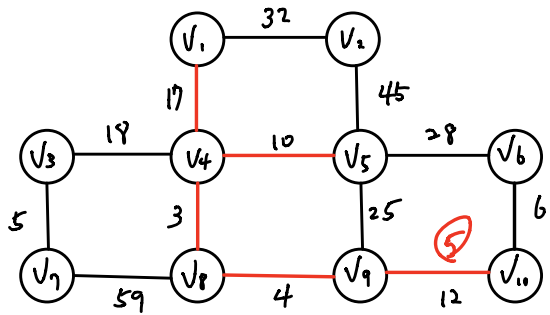
4.  $\{V_1, V_4, V_8, V_9\}$



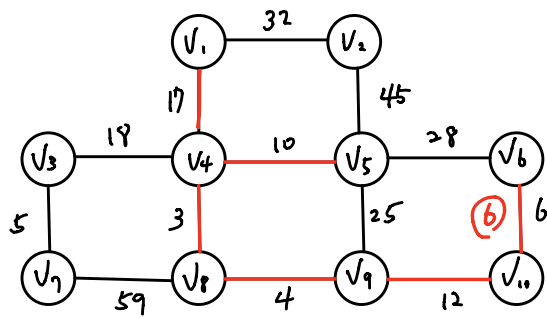
5.  $\{V_1, V_4, V_8, V_9, V_5\}$



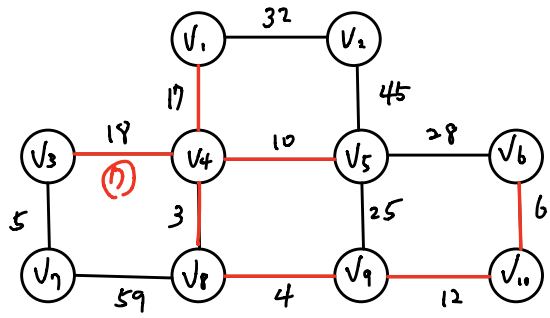
6.  $\{V_1, V_4, V_8, V_9, V_5, V_{10}\}$



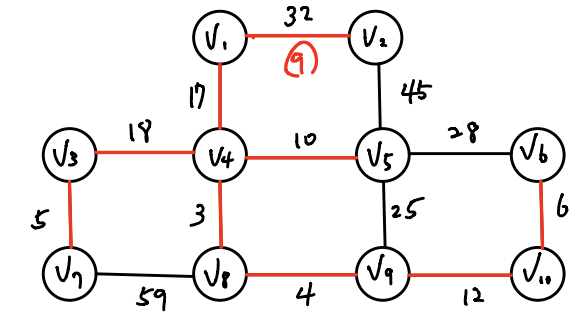
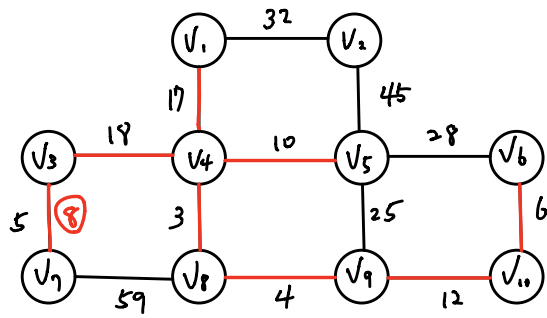
7.  $\{v_1, v_4, v_8, v_9, v_5, v_{10}, v_6\}$



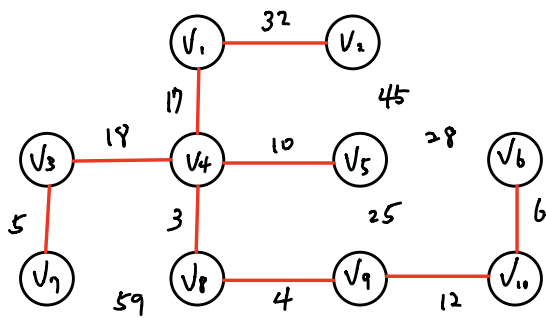
8.  $\{v_1, v_4, v_8, v_9, v_5, v_{10}, v_6, v_3\}$



9.  $\{v_1, v_4, v_8, v_9, v_5, v_{10}, v_6, v_3, v_7\}$



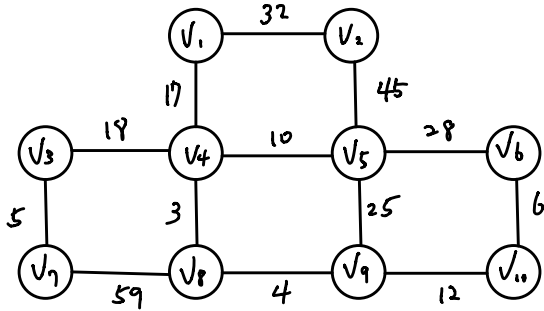
10. Answer



#

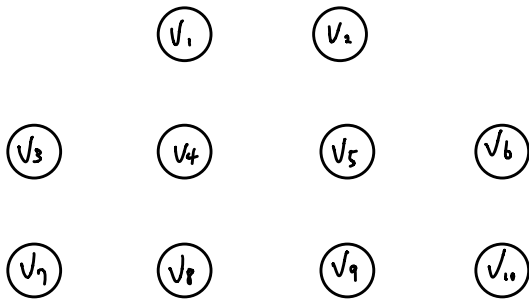
7,

1. find minimum tree

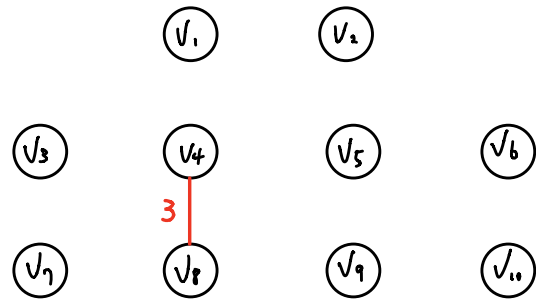


- |                 |    |              |    |
|-----------------|----|--------------|----|
| 2. $(v_4, v_8)$ | 3  | $(v_5, v_9)$ | 25 |
| $(v_8, v_9)$    | 4  | $(v_6, v_5)$ | 28 |
| $(v_3, v_7)$    | 5  | $(v_1, v_2)$ | 32 |
| $(v_{10}, v_6)$ | 6  | $(v_2, v_5)$ | 45 |
| $(v_4, v_5)$    | 10 | $(v_7, v_8)$ | 59 |
| $(v_9, v_{10})$ | 12 |              |    |
| $(v_1, v_4)$    | 17 |              |    |
| $(v_3, v_4)$    | 18 |              |    |

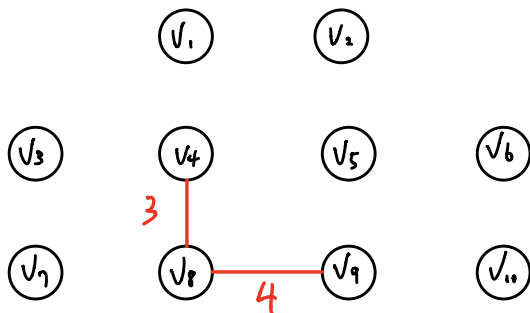
3. find all sets.



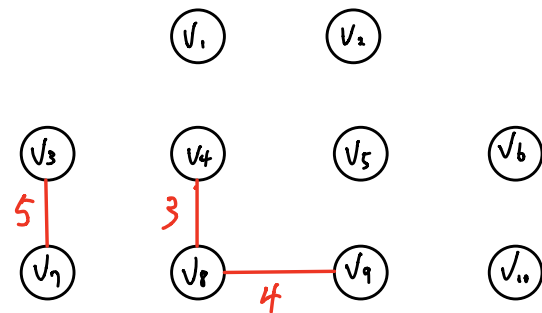
4. connect  $\{v_4, v_8\}$



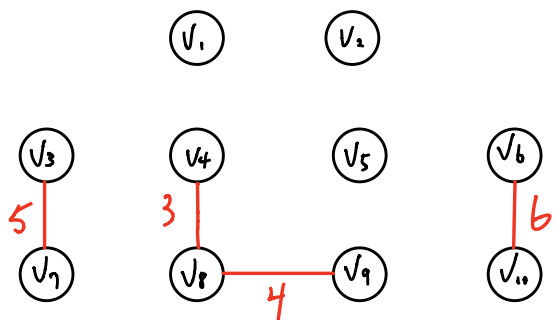
5. connect  $\{v_8, v_9\}$



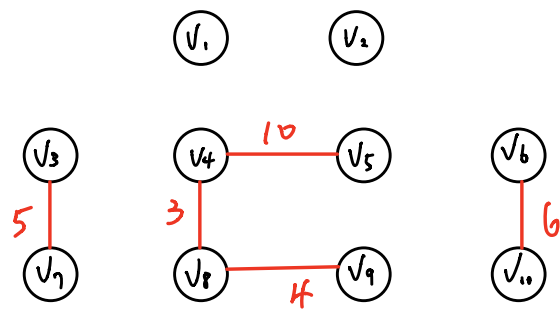
6. connect  $\{v_3, v_7\}$



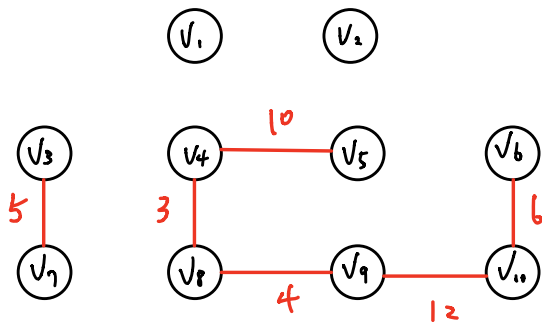
7. connect  $\{V_6, V_{10}\}$



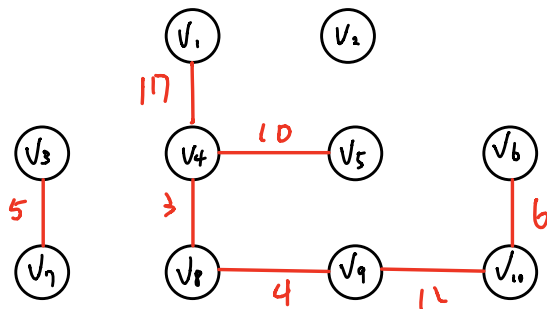
8. connect  $\{V_4, V_5\}$



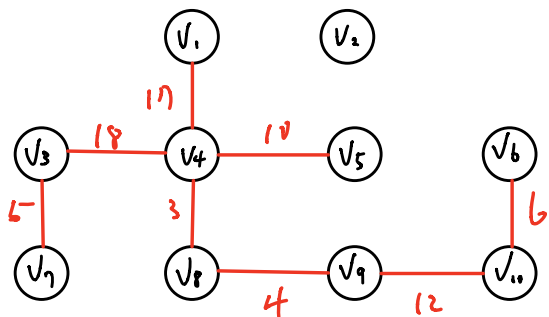
9. connect  $\{V_9, V_{10}\}$



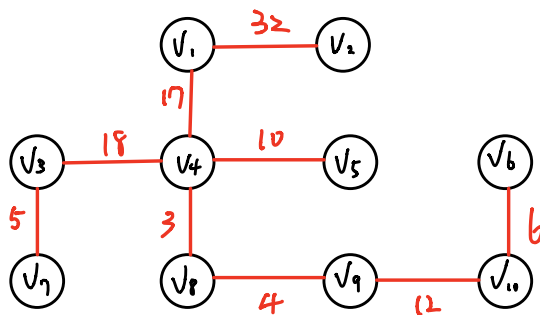
10. connect  $\{V_1, V_4\}$



11. connect  $\{V_3, V_4\}$



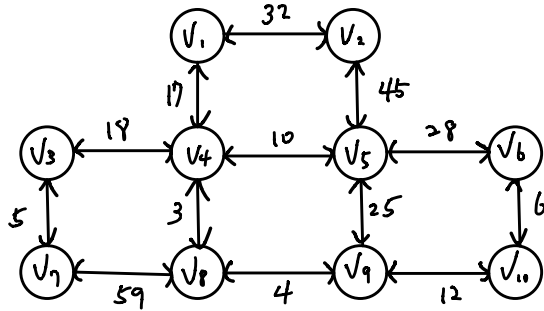
12. connect  $\{V_1, V_2\}$



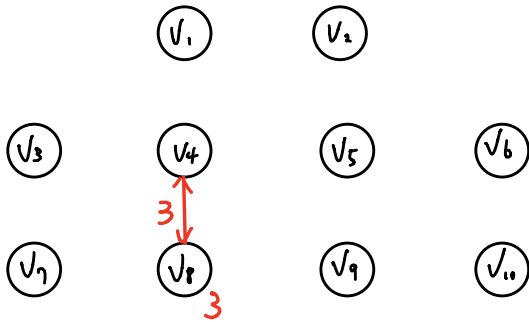
Answer #

13.

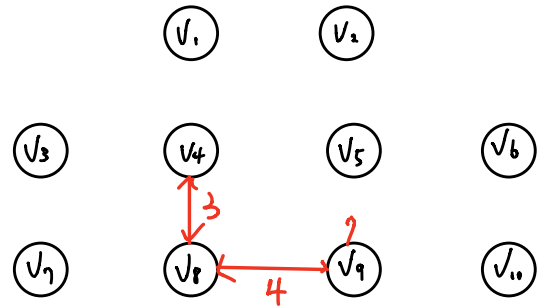
find minimum tree



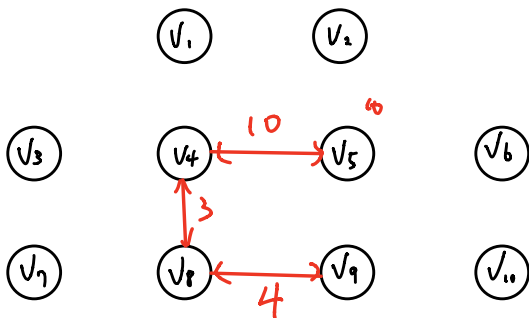
1.  $V_4 \rightarrow V_8 = 3$



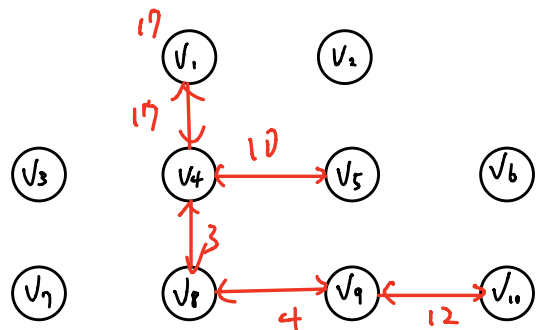
2.  $V_4 \rightarrow V_9 = 7$



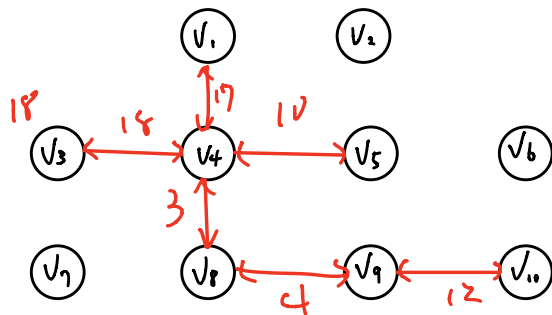
3.  $V_4 \rightarrow V_5 = 10$



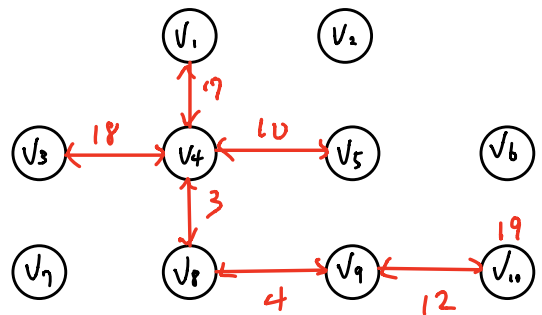
4.  $V_4 \rightarrow V_1 = 17$



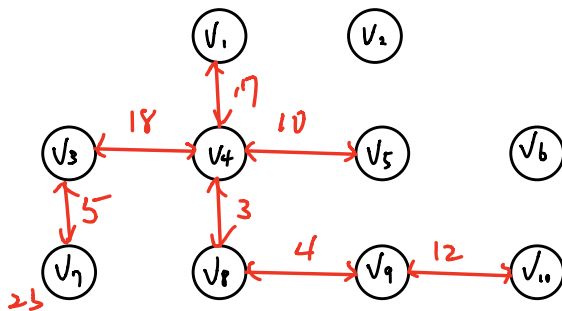
6.  $V_4 \rightarrow V_3 = 18$



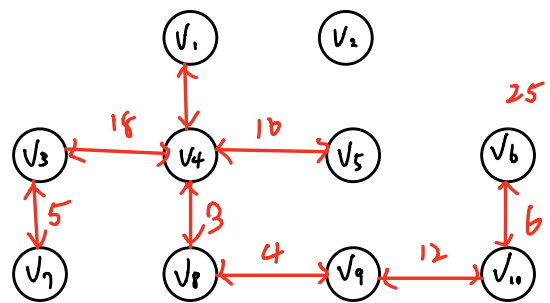
7.  $V_4 \rightarrow V_{10} = 19$



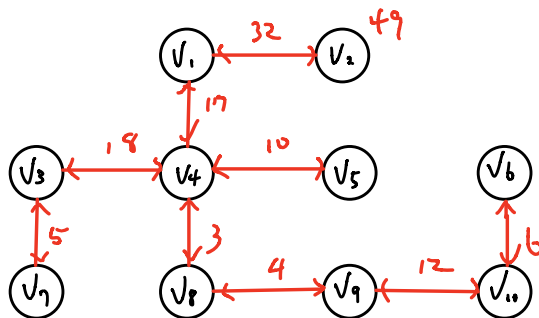
7.  $V_4 \rightarrow V_7 = 23$



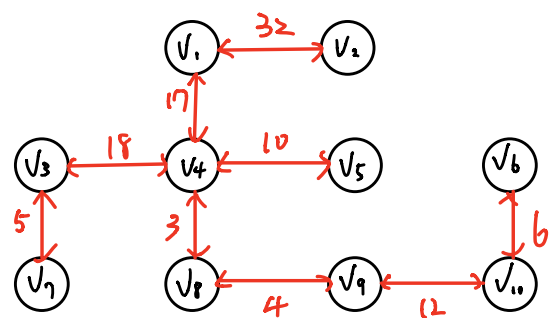
8.  $V_4 \rightarrow V_6 = 25$



9.  $V_4 \rightarrow V_2 = 49$



Ans



19.

| Job     | service time             |
|---------|--------------------------|
| 1 2 3 4 | $7 + 10 + 20 + 25 = 62$  |
| 1 2 4 3 | $7 + 10 + 15 + 25 = 57$  |
| 1 3 2 4 | $7 + 17 + 20 + 25 = 69$  |
| 1 3 4 2 | $7 + 17 + 22 + 25 = 71$  |
| 1 4 2 3 | $7 + 12 + 15 + 25 = 59$  |
| 1 4 3 2 | $7 + 12 + 22 + 25 = 66$  |
| 2 1 3 4 | $3 + 10 + 20 + 25 = 58$  |
| 2 1 4 3 | $3 + 10 + 15 + 25 = 53$  |
| 2 3 1 4 | $3 + 13 + 20 + 25 = 61$  |
| 2 3 4 1 | $3 + 13 + 17 + 25 = 58$  |
| 2 4 1 3 | $3 + 8 + 15 + 25 = 51$ ✓ |
| 2 4 3 1 | $3 + 8 + 18 + 25 = 54$   |
| 3 1 2 4 | $10 + 17 + 20 + 25 = 72$ |
| 3 1 4 2 | $10 + 17 + 22 + 25 = 74$ |
| 3 2 1 4 | $10 + 13 + 20 + 25 = 68$ |
| 3 2 4 1 | $10 + 13 + 18 + 25 = 66$ |
| 3 4 1 2 | $10 + 15 + 22 + 25 = 68$ |
| 3 4 2 1 | $10 + 15 + 18 + 25 = 68$ |
| 4 1 2 3 | $5 + 12 + 15 + 25 = 57$  |
| 4 1 3 2 | $5 + 12 + 22 + 25 = 64$  |
| 4 2 1 3 | $5 + 8 + 15 + 25 = 53$   |
| 4 2 3 1 | $5 + 8 + 18 + 25 = 56$   |

$$\begin{array}{ccc|ccc} 4 & 3 & 1 & 2 & 5 & + & 15 & + & 22 & + & 15 & = & 67 \\ 4 & 3 & 2 & 1 & 5 & + & 15 & + & 18 & + & 25 & = & 63 \end{array}$$

Ans.

$$\text{Job } [2 \ 4 \ 1 \ 3] = 51 \text{ \#}$$

22.

$$1. \ J = [1]$$

$$2. \ K = [1, 2] \text{ is feasible} \\ J = [1, 2]$$

$$3. \ K = [1, 3, 2] \text{ is feasible} \\ J = [1, 3, 2]$$

$$4. \ K = [4, 1, 3, 2] \text{ not feasible}$$

$$5. \ K = [1, 3, 5, 2] \text{ not feasible}$$

$$6. \ K = [6, 1, 3, 2] \text{ is feasible} \\ J = [6, 1, 3, 2]$$

$$7. \ K = [7, 1, 3, 2] \text{ is feasible} \\ J = [7, 1, 3, 2]$$

$$\text{Maximum profit} = [7, 1, 3, 2] = 55 + 40 + 60 + 15 = 170 \text{ \#}$$