

# 5) Vogel Approximation method.

|       | $W_1$ | $W_2$ | $W_3$ |      |
|-------|-------|-------|-------|------|
| $F_1$ | 8     | 10    | 12    | 900  |
| $F_2$ | 12    | 13    | 12    | 1000 |
| $F_3$ | 14    | 10    | 11    | 1200 |
|       | 1200  | 1000  | 900   |      |

|       | $W_1$   | $W_2$ | $W_3$ |      |   |
|-------|---------|-------|-------|------|---|
| $F_1$ | 900 / 8 | 10    | 12    | 900  | 2 |
| $F_2$ | 12      | 13    | 12    | 1000 | 0 |
| $F_3$ | 14      | 10    | 11    | 1200 | 1 |

$\checkmark$  1200 300 1000 900  
 $\checkmark$  4 800 11

$\checkmark$   
 maximum

|       | $W_1$ | $W_2$ | $W_3$ |      |   |
|-------|-------|-------|-------|------|---|
| $F_2$ | 12    | 13    | 12    | 1000 | 0 |
| $F_3$ | 14    | 10    | 11    | 1200 | 1 |

300      1000      900

2      3      1

↓  
Max

|       | $W_1$ | $W_3$ |      |         |
|-------|-------|-------|------|---------|
| $F_2$ | 12    | 12    | 1000 | 0       |
| $F_3$ | 14    | 11    | 200  | 3 → Max |

300      900

2      1

|       | $W_1$     | $W_3$ |
|-------|-----------|-------|
| $F_2$ | 300<br>12 | 12    |

3000      700

12      12

|       | $W_3$     |
|-------|-----------|
| $F_2$ | 700<br>12 |

7000

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$$VAm = 900 \times 8 + 1000 \times 10 + 200 \times 11 + 300 \times 12 + 700 \times 12$$

$$= 7200 + 10000 + 2200 + 3600 +$$

$$8400$$

$$= 31400.$$