

Ans - 3

VOGEL'S APPROXIMATION

✓ Approximation method is a technique for finding a good initial feasible solution to an allocation problems.

The powers that be have identified 5 tasks that need to be solved urgently. Being imaginative chiefs they have called them A", B", C", D" and E"

They estimate that

A will require 30 hours of work

B will require 20 hours of work.

C will require 70 hours of work

D will require 30 hours of work

and

E will require 60 hours of work

They have identified 4:
Contractors willing to do the
work called W¹, X¹, Y¹ and Z¹

o W has 50 hours available to
commit to working:

X has 60 hours available
Y has 50 hours available and
Z has 50 hours available

They cost per hour for each
Contractor for each task is
summarized by the following
table.

	A	B	C	D	E
W	16	16	13	22	17
X	14	14	13	19	15
Y	19	19	20	23	20
Z	50	12	50	15	11

This task is to use VAM
to allocate contractors to
task. It works as follows

Step - 2) - Balance the given
transportation problem it

either (total supply > total demand) or
total supply < total demand)

Step 2 | - Determine the penalty
cost for each row and
column by subtracting the
lowest cell cost in the row
or column from the next
lowest cell cost in the same
row or column.

Step 3 | - Selecting the row or
column with the highest
penalty cost (breaking ties
arbitrarily or choosing the
lowest cost cell).

Step 4 | - Allocate as much as
possible to the feasible
cell with the lowest
transportation cost in
the row or column with
the highest penalty cost.

Step 5 | - Repeat steps 2, 3 and 4
until all requirements have been
met.

Step 6 - Compute total transportation
cost for the feasible
allocation.