

To determine whether the road construction project is expected to be completed on budget, under budget, or over budget, we can use **Cost Variance (CV)** and **Cost Performance Index (CPI)**.

CPI = $\frac{EV}{AC}$

Step 1: Calculate the **Cost Performance Index (CPI)**

$CPI = \frac{4,500,000}{9,000,000} = 0.5$

A **CPI** of 0.5 indicates that for every dirham spent, the project is only earning 0.5 dirhams of value.

$AC = 9,000,000 \text{ AED}$

Step 3: Calculate the **Cost Variance (CV)**

$CV = EV - AC = 4,500,000 - 9,000,000 = -4,500,000 \text{ AED}$

A **negative CV** means the project is over budget by AED 4,500,000. So, the Earned Value (EV) for the project after 10 weeks is:

$EV = 30\% \times 15,000,000 = 4,500,000 \text{ AED}$

Step 2: Calculate the **Actual Cost (AC)**

The actual cost spent after 10 weeks is AED 9,000,000, as provided in the scenario.

Cost Performance Index (CPI) CPI is a ratio that indicates the cost efficiency of the project.

Cost Variance (CV) Cost Variance is a measure of the difference between the Earned Value (EV) and the Actual Cost (AC).

Conclusion: – The **Cost Variance (CV)** is negative (AED –4,500,000), meaning the project is over budget.

1.### 2.