EVM Formula Quick Reference

Earned Value Management - the formulas the exam expects you to know cold.

Earned Value Management (EVM) questions are a reliable feature of the Process domain. You won't be given a formula sheet in the exam - these need to be memorised and practised until they're automatic.

1 The three base measures

TERM	ABBR.	WHAT IT MEANS
Planned Value	PV	The budgeted value of work that should be done by now
Earned Value	EV	The budgeted value of work actually completed so far
Actual Cost	AC	What you've actually spent to get that work done
Budget at Completion	BAC	The total approved budget for the project

2 Variance & performance formulas

Cost Variance (CV)
`CV = EV - AC`
Positive = under budget. Negative = over budget.

Schedule Variance (SV)
`SV = EV - PV`
Positive = ahead of schedule. Negative = behind.

Cost Performance Index (CPI)
`CPI = EV / AC`
Above 1.0 = efficient spending. Below 1.0 = overspending.

Schedule Performance Index (SPI)
`SPI = EV / PV`
Above 1.0 = ahead of schedule. Below 1.0 = behind.

3 Forecasting formulas

Estimate at Completion (EAC)
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EAC = BAC / CPI (typical - current performance will continue)
EAC = AC + (BAC - EV) (atypical - a one-off variance)
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Estimate to Complete (ETC)
`ETC = EAC - AC`
What you still expect to spend from today.

Variance at Completion (VAC)
`VAC = BAC - EAC`
Projected over/under budget at project close.

To-Complete Performance Index (TCPI)
`TCPI = (BAC - EV) / (BAC - AC)`
The cost efficiency required on remaining work to still hit the original budget.

4 Quick worked example

A project has BAC = R500,000. At the review point, PV = R200,000, EV = R180,000, AC = R220,000.
CV = 180,000 - 220,000 = -R40,000 (over budget) · SV = 180,000 - 200,000 = -R20,000 (behind schedule)
CPI = 180,000 / 220,000 = 0.82 · SPI = 180,000 / 200,000 = 0.90 - both under 1.0, so the project is running over budget and behind schedule.

Memory tip: EV always comes first in variance formulas (EV - AC, EV - PV) and is always the numerator in performance indices (EV / AC, EV / PV).

Want these to become second nature?
We drill EVM with real scenarios in every cohort.

Starts 22 September 2026 · Tue & Thu, 3-5PM (SAST)
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