PMP EXAM FORMULAS (PMBOK 5th Edition)

PERT Estimation Formulas

$$\text{PERT Formula} = \frac{P + 4M + O}{6}$$

$$\text{Standard Deviation} = \frac{P - O}{6}$$

$$\text{Variance} = \frac{[P - O]^2}{6^2}$$

Where P = Pessimistic Estimate
O = Optimistic Estimate
M = Most Likely Estimate

How to calculate a Task Slack in a Network Diagram

Slack = LS – ES

Slack = LF – EF

Where LS = Task Late Start
ES = Task Early Start
LF = Task Late Finish
EF = Task Early Finish

Earned Value Formulas

Cost Variance (CV) = EV – AC
Schedule Variance (SV) = EV – PV
Cost Performance Index (CPI) = EV / AC
Schedule Performance Index (SPI) = EV / PV
Estimate to Completion (ETC) = EAC – AC
Variance at Completion (VAC) = BAC – EAC
Estimate at Completion (EAC) = BAC / CPI

$$\text{To Complete Performance Index (TCPI)} = \frac{(BAC - EV)}{(BAC - AC)}$$

Where EV = Earned Value
AC = Actual Cost
EAC = Estimate at Completion
BAC = Budget at Completion

Present Value

$$PV = \frac{FV}{(1+r)^n}$$

Where FV = Future Value
r = Interest Rate
n = number of time periods

Communication Channels

$$\frac{(N^2 - N)}{2}$$

Where: N = Number of people

Expected Monetary Value

Expected Monetary Value = P x I

Where P = Probability I = Impact

Point of Total Assumption

$$\text{PTA} = \frac{(\text{Ceiling price} - \text{Target Price})}{\text{Buyer's share ratio}} + \text{Target Cost}$$