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PROJECT ROAD TRAINING

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# PMP® EXAM PREP EBOOK

*What it Really Takes to Prepare and Pass*



**BY WILLIAM BAXTER**



# WELCOME

PMP® Exam Prep  
What it Really Takes to Prepare and Pass  
An eBook by Project Road Training, LLC

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**Bill Baxter**

| Educator | Engineer | Business Owner |

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# About Project Road Training, LLC

Developed from a Study Group formed to prepare for the PMP® Exam, Bill saw how his study group struggled to see a clear path towards passing the PMP® exam. Misleading claims and lousy guidance could be found everywhere.

Folks needed more clear and honest guidance. Bill took up the challenge of filling that need.

Bill gets great satisfaction from each student success story and the knowledge that he is helping students advance in their careers through PMP® Exam Success.

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## Bill Baxter, PMP

**Email:** bill@project-road.com

**Occupation:** Instructor, teaching PMP Exam Prep

### Background:

- MBA, Finance & Accounting (Columbia University)
- BS, Mechanical Engineering (Stanford University)

### Experience:

Engineering in the aerospace industry, followed by various roles in the IT industry.

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AUTHOR

This document was refined and validated through feedback from my CAPM® and PMP® students.

A special thank you for your trust in my direction - as well as the effort put into studying to succeed.

To ensure success, follow me closely on along Project Road - A Roapmap to Success.



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# PURPOSE

The purpose of this eBook is to provide you with wise guidance that helps you prepare for the PMP® exam as efficiently as possible.

Utilizing our roadmap to success strategies will provide the groundwork to succeed!

The guidance in this eBook is based on the experiences of Bill Baxter as he works with hundreds of students as they prepare for the exam, as well as his own PMP® exam experience.

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## How Should I Approach Studying?

You will find a proven path within this eBook to guide you along the way.

This eBook includes critical instruction on aspects of The *PMBOK® Guide* that students find especially challenging - including Schedule Network Diagrams and Earned Value Management.

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# APPLICATION PROCESSES

# 01

Check your eligibility early on to ensure you meet the requirements.

# 02

List out your project experience early-on and keep track of your project experience and how close or how far from the requirements goal you are.

# 03

Develop a study plan and set a test date. Get your application process completed and hit the road running on studying often and early.

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# Eligibility Requirements

Authoritative source: 'PMP Handbook' available on PMI.org  
The core requirements are:

- Project Experience over a calendar span of 36 Months
- Or 60 Months if you do not have a 4-year college degree
- 35 hours of Qualified Project Management Training
- Waived if you already have the CAPM certification

## *HOT TIP!*

- Alternative to expensive 35 hours of training is to get the CAPM certification first – then 35 hr requirement is waived
- Read more about the logic of this approach here:  
<https://www.project-road.com/blog/capm-first>

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# List Your Project Experience

Keep a record of every project you work on.

Keep in mind PMI's definition of a project: "A temporary endeavor undertaken to create some unique product, service or result"

In your PMI application to take the PMP exam, you will want your project descriptions to make clear the role you personally played, as well as the unique and temporary nature of each project.

We often help our students with the application process -- reviewing draft project descriptions and providing feedback prior to submittal



Bonus tip: Minimize the number of contacts listed in case you get audited.

- Much easier to pass audit, as fewer contacts involved

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## TIP S

## Develop A Study Plan & Set Test Date

Schedule your test date a month in advance for scheduling flexibility and form a study group that prioritizes attendance.

- Motivation can be your friend or your enemy. By prioritizing attendance of study group meetings, you're not only motivating yourself but other members to continue to prepare and show up.

We have found that consistency of study effort is super-critical: skipping weeks, or even just days, and your memory leaks out detail that need to be recharged. As much as possible, carve out 3 months and keep your head in the game over that period of time.

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# PMP® Certification Exam

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## Test Format:

- 180 Questions
- 230 minutes (nearly 4 hours)
- Multiple Choice (four choices for the most part), and a smattering of questions of other formats
- No penalty for wrong choices

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# PMP® Certification Exam Environment

## What to Expect on The Exam:

- Some 'pure' ITTO-type questions
- Some frustratingly vague questions
- A significant number of situational-type questions
  - Expect some ethical scenario questions
- Many 'dense' questions
  - Where you need to read the question and choose an answer very carefully.
  - These questions take some puzzling to figure out what is really being asked.
- Some EVM questions (a few, and they tend to be simple)
- Schedule network diagrams likely to be quite simple or pre-drawn for you

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# PMBOK<sup>®</sup> Guide 6th Edition

## PMI MEMBERSHIP

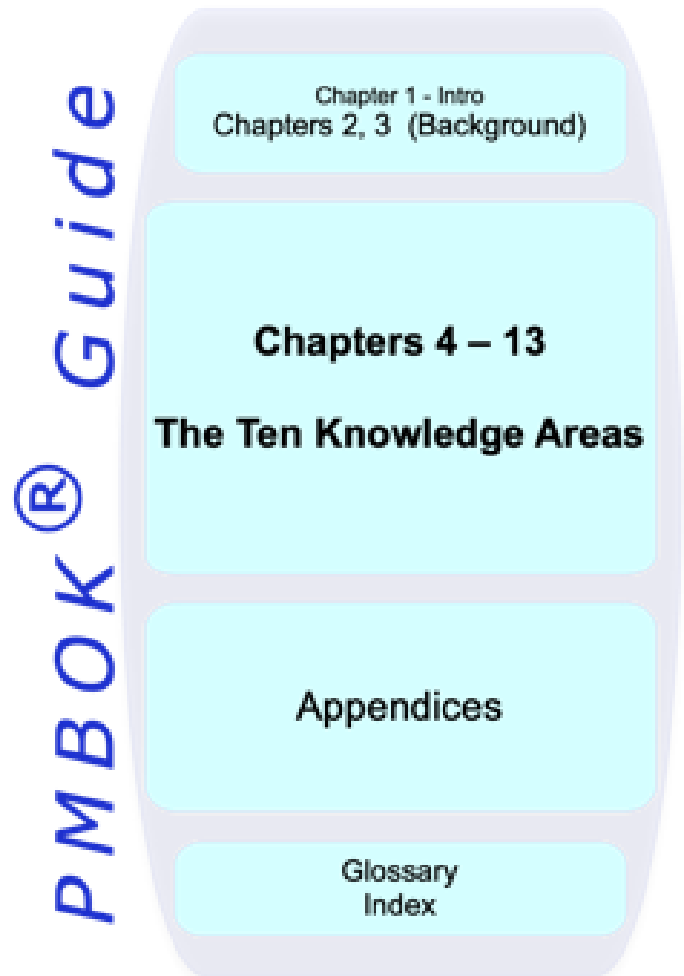
You'll receive a password protected PDF version of The *PMBOK<sup>®</sup> Guide* when you become a member.

## CHAPTERS

There are 13 Chapters within The *PMBOK<sup>®</sup> Guide* - with a glossary, appendices, and index to reference.

## FORMAT

Chapters 1-3 provide background. Chapter 4-13 correspond to the ten "Knowledge Areas".



PMI.org  
Web Site

Code of Ethics and  
Professional Conduct

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# ***PMBOK*® Guide 6th Edition**

## **Suggested Study Strategy**

**The *PMBOK*® Guide is dry, tedious reading**

You need a strategy to circle around it and wrestle it under control.

### **First Pass (~2 Chapters/week - 6 Weeks in total)**

- Skim through the chapter in The *PMBOK*® Guide (Light Quick Skim)
- Watch the video lecture segments for the topic within a good CAPM eLearning course. See FAQ #7 in our website for course recommendations.
- Read the corresponding chapter within the Crosswind study guide
- Do practice questions within CAPM eLearning course
- Go through the whole framework this way, building a solid foundation chapter by chapter.
- Work on your 'brain dump' as well as the flashcards and ITTOs in parallel with all of the above content.

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# ***PMBOK® Guide 6th Edition*** **Suggested Study Strategy**

**The *PMBOK® Guide* is hard to read**

It is tedious to read, which means you need to strategize how to circle around it and wrestle the contents under control.



## **Second Pass (~2 Chapters/week - 6 Weeks in total)**

- Conduct a selective, deep reading of The *PMBOK® Guide*
- Read past the information you already know - read for the other, subtler information you need to absorb and retain on a best effort basis.
- Do practice questions within the Crosswind study guide
- Keep working on the 'brain dump' as well as flash cards and ITTOs

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# Supplemental Study Materials

## Crosswind Book

### "PMP Exam Success Series: Bootcamp Manual"

*by Tony Johnson*

### Here's Why...

1. The Crosswinds book is easier to Absorb -- get the PMP version and use it as you study for both the CAPM exam and then for the PMP exam
2. Pay particular attention to the 'end of chapter' questions
3. Crosswinds book covers additional materials not covered in *The PMBOK<sup>®</sup> Guide, for example:*
  - a. Standard Deviation (sigma), Chapter 8 - Quality
  - b. Organizational Theory, Chapter 9 - Resources
  - c. Point of Total Assumption, Chapter 12 - Procurement
4. Additional study recommendations can be found on the [www.project-road.com](http://www.project-road.com) website.

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# Study Group Management

Weekly study groups provide support and motivation

## TIP 1

Agree on a study guide and a means to communicate between study groups

## TIP 2

Have everyone bring their own study guides to each session.

## TIP 3

Do as many practice questions as possible, each session

## TIP 4

Go through questions one at a time, reading each question quietly to yourself. *Commit* to an answer -- write it down! (A, B, C, or D)

## TIP 5

Discuss the correct answer with the group, resolve any confusion, then move on to the next question

## TIP 6

Decide on Group rules and stick to them, avoiding excessive time-wasting chit-chat.

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# Practice Questions vs. Practice Tests

## PRACTICE QUESTIONS

- Doing lots of practice questions is a great way to learn the material.
- Of the leading study guides, the Crosswinds study guide seems the most useful for practicing for the CAPM and PMP exams.
- There may be a few questions that do not make sense -- do not dwell on these too long; just move on.

## PRACTICE TESTS

- Common advice heard -- do lots and lots of practice tests
- Our view: If they fit anywhere, it is late in your study cycle, during a final tune-up phase. There is a set of practice tests that we recommend: See FAQ #10 on our website.

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# There Are Two Material Challenges Before You

## CHALLENGE 1

Learning PMI's basic framework for project management. This will be your focus as you prepare for the CAPM exam, circling around The *PMBOK® Guide* and wrestling it under control, memorizing your two page brain dump, watching lecture videos within the CAPM eLearning course

## CHALLENGE 2

Getting to the very best answer choice. This requires reading each question carefully, avoiding hidden assumptions and other head fakes. There are a number of key underlying principles you need to learn to navigate the ambiguity you will find, especially on the PMP exam.

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# The 'Brain Dump'

You are given 15 minutes to take a tutorial on the computer interface before your test begins.

- According to PMI, you are not allowed to begin writing your brain dump during this period, but must wait until your 4-hour test clock begins.
- Write out you 2-page 'brain dump' before you start working on the test questions.
- Practice the 'brain dump' until you can write it out in no more than 20 minutes. Be careful not to take away from your test time too much.
- Refer to your 'brain dump' during the test as often as needed.

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# Exam Taking Strategy

When you come across a question that will take longer to answer than average, 'mark' it and save it for a second pass through the test.

- 'Mark' questions selectively, no more than 20-30 questions.
- Use the 'mark' option if you are unsure about answer, but guess something, in case you run out of time
- Use the full 4 hours to review your answers, but select your best answer during your first pass whenever possible.
- Do not submit the test with questions unanswered!

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# Schedule & Cost



## Two Primary Areas of Struggle are...

1. Schedule Network Diagrams
2. Earned Value Management Calculations

In the next few pages, we will cover these topics.

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# Project Schedule Network Diagrams

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**PMBOK® Guide Chapter 6 (Time Management) is heavily dependent upon these diagrams - knowing how to draw them and how to work with them is critical to doing well on the exam.**

## Simple Example

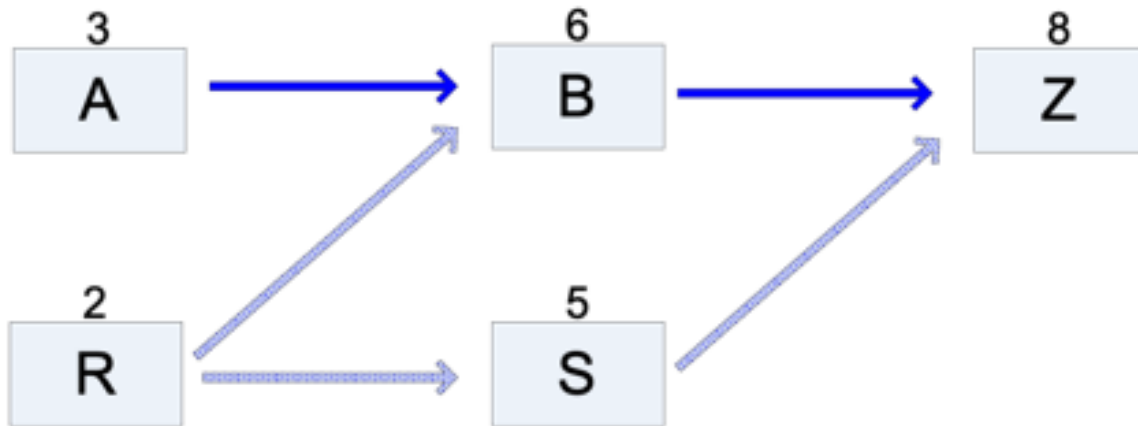
- Task A requires three days to complete
- Task R requires 2 days to complete
- Task B must follow tasks A and R and requires 6 days to complete
- Task S must follow tasks R and requires 5 days to complete
- Task Z must follow task B and S and requires 8 days to complete
- Determine early and late start and finish dates and slack in each task

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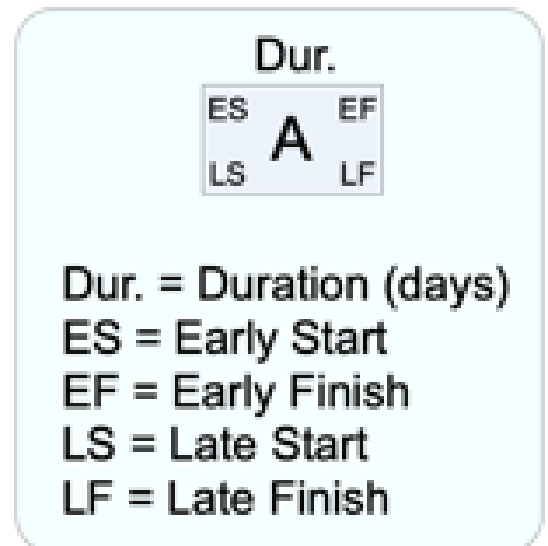




# Project Schedule Network Diagrams



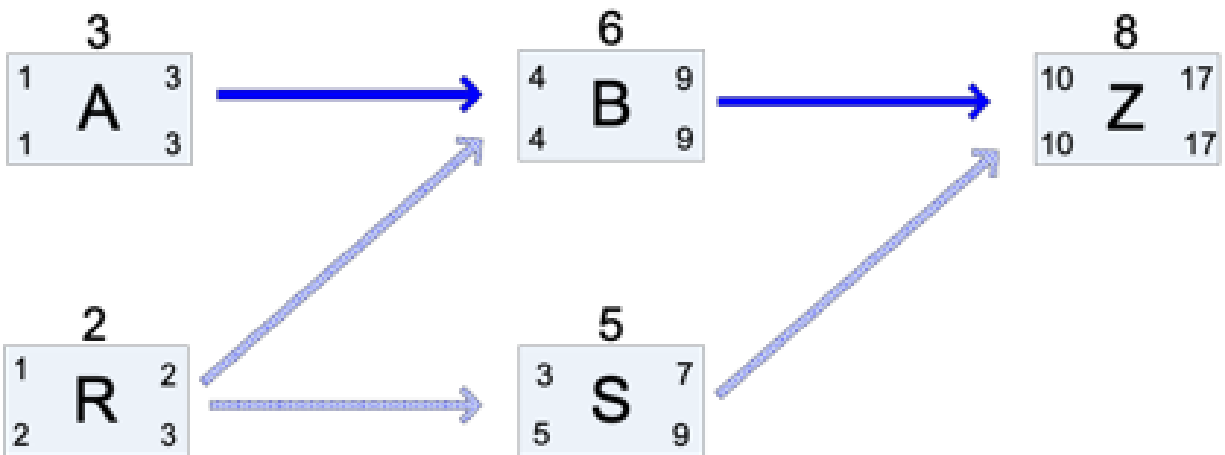
## Network Diagram Legend



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# Project Schedule Network Diagrams



- + Tasks A, B, and Z on critical path and have zero float
- + Task R has 1 day total float (LF-EF=1)
  - Zero free float (a delay would delay task S)
- + Task S has 2 days 'total float' (LF-EF=2)
  - 2 days 'free float' (can delay 2 days without impacting task Z)

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# Cost Knowledge Area Earned Value Management (EVM)

EVM, in Chapter 7 - Cost Management

Is a key part of *The PMBOK® Guide*

- EVM is a rigorous way to measure and report project scope, schedule, and cost performance against plan over the life of the project
- EVM is used extensively in U.S. federal government projects
- Hence it is used by defense contractors who do lots of US Federal Government Business
- It is also used by other firms with mature project management practices

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# Cost Knowledge Area

# Earned Value Management

# (EVM)

## **EVM, in Chapter 7 - Cost Management, continued:**

- How EVM works (high-level view):
- Deconstruct the project work into activities
- Estimate costs and bundle-up into 'Work Break-down Structure' (WBS) units
- The estimated cost of each WBS unit is the 'Planned Value' of that WBS unit
- Once the work is completed on that WBS unit, all of that 'Planned Value' (PV) has been converted to 'Earned Value' (EV), while 'Actual Cost' (AC) is incurred over time.
  - EV is a measurement of what you have accomplished. If EV is less than the PV at a given point in time, it means you are behind schedule.
  - EVM is the tracking of that conversion from Planned Value to Earned Value, and the examination of how the EV compares to both PV and AC, at any given point in time

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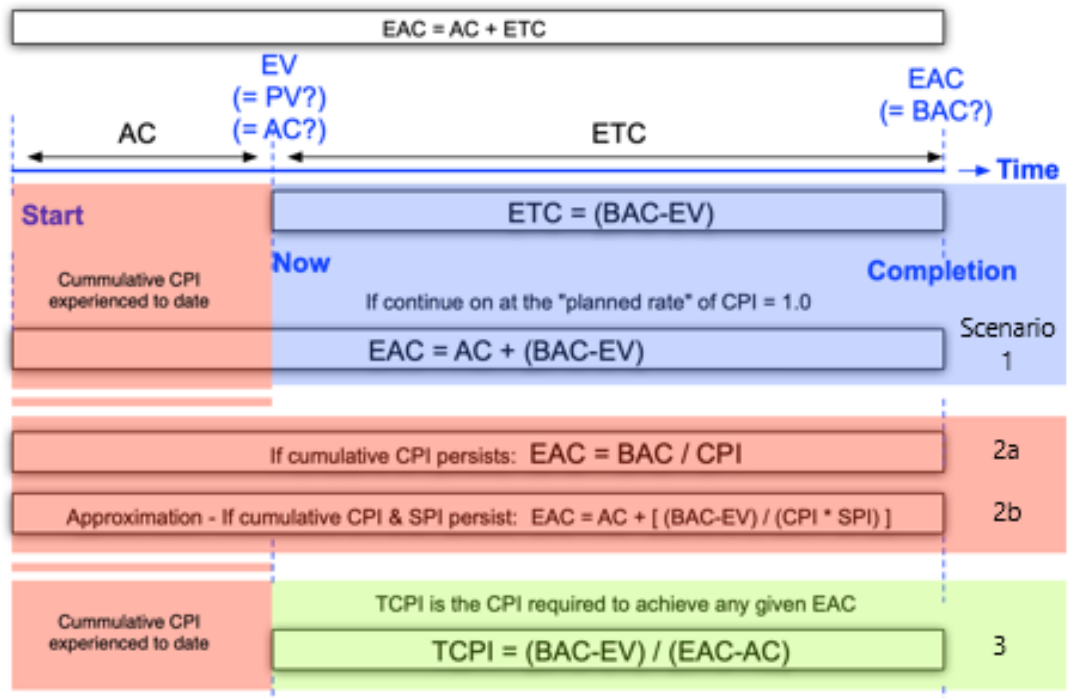
# The Important EVM Equations

## EVM, Earned Value Management: PV becomes EV as AC incurred over time

**Concept:**  $\sum WBS_i = \sum PV_i =$  'Performance Management Baseline' = BAC (Budget @ Completion)

ETC: Estimate to Complete  
 EAC: Estimate at Completion  
 BAC: Budget At Completion  
 $EV_i = PV_i * \% \text{ Complete (UOS)}$

SPI = Schedule Perf. Index  
 SV = Schedule Variance  
 CPI = Cost Performance Index  
 CV = Cost Variance  
 VAC = Variance at Completion  
 TCPI = To Complete Perf. Index



$SPI = EV / PV \sim SV = EV - PV$   
 $CPI = EV / AC \sim CV = EV - AC$   
 $<1 \text{ is BAD} \sim \text{Negative is BAD}$

$VAC = BAC - EAC$   
 Negative is BAD

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# Earned Value Management (EVM) Practice Exercises

## EVM QUESTION 1

The ten million-dollar project is running ahead of schedule.

CPI is 0.75

Assuming this continues what is the projected project cost upon completion?

- A \$10,000,000
- B. \$7,500,000
- C. \$12,750,000
- D. \$13,333,333

## EVM ANSWER 1

The scenario is that past CPI performance will continue throughout the project. (This is called scenario 2a on previous page).

We know this from: "CPI is 0.75 assuming this continues..."

So we use the equation:

$$EAC = BAC / CPI = \$10,000,000 / 0.75 = \$13,333,333 = \text{Answer "D"}$$

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# 'Brain Dump' - Page 1 (Process Matrix)

|                 |                  | Process Groups          |                           |  |   |                        |
|-----------------|------------------|-------------------------|---------------------------|--|---|------------------------|
|                 |                  | Initial                 | Planning                  | Execution  | Monitor & Control                                 | Close                  |
|                 |                  | Initiation              | Planning                  | Execution  | Monitor & Control                                 | Close                  |
| Knowledge Areas | Integration      | Develop Project Charter | Develop Project Mgmt Plan | Direct & Mg Proj. Work<br>Manage Proj. Knowledge | M&C Project Work<br>Perform Integ. Change Control | Close Project or Phase |
|                 | Scope            |                         |                           |  |   |                        |
|                 | Time / Schedule  |                         |                           |  |   |                        |
|                 | Cost             |                         |                           |  |   |                        |
|                 | Quality          |                         |                           |  |   |                        |
|                 | Resource         |                         |                           |  |   |                        |
|                 | Communications   |                         |                           |  |   |                        |
|                 | Risk             |                         |                           |  |   |                        |
|                 | Procurement      |                         | Plan Procurement Mgmt     | Conduct Procurements                             | Control Procurements                              |                        |
|                 | Stakeholder Mgmt | Identify Stakeholders   | Plan SH Engagement        | Manage SH Engagement                             | Monitor SH Engagement                             |                        |

sum = 69

Out of respect for PMI's copyrights, this table is partially obscured.

As a PMI member you will have access to a soft copy of The *PMBOK® Guide* and this table within.

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# 'Brain Dump' - Page 2

## (Formulae)

Sum  $WBS_i = \text{Sum } PV_i = \text{PMB, Performance Measurement Baseline} = \text{BAC}$

SPI, Schedule Performance Index =  $EV / PV$  [ <1 BAD ]

SV, Schedule Variance =  $EV - PV$  [ Neg. BAD ]

CPI, Cost Performance Index =  $EV / AC$  [ <1 BAD ]

CV, Cost Variance =  $EV - AC$  [ Neg. BAD ]

EAC, Estimate at Completion =  $AC + \text{Bottom-up ETC (Estimate to Complete)}$

Continuing work at planned rate of CPI = 1.0,  $EAC_1 = AC + (BAC - EV) = AC + \text{ETC}$

If follow past CPI,  $EAC_{2a} = BAC / CPI$

If follow past CPI and SPI,  $EAC_{2b} \sim AC + [(BAC - EV) / (CPI * SPI)]$

TCPI, To Complete Performance Index =  $(\text{rem. wk} / \text{rem budget}) = (BAC - EV) / (EAC - AC) = CPI_f$

VAC, Variance at Completion =  $BAC - EAC$  [ Neg. BAD ]

PERT~ Program Evaluation and Review Technique:  $\text{Cost} = (P + O + 4M) / 6$

PTA = Target Cost +  $[(\text{Ceiling Price} - \text{Target Price}) / \text{Buyer's Share}]$

Present Value,  $PV = FV / (1+r)^n$

# Channels of Communication =  $n * (n-1) / 2$

Statistical Variance =  $\sigma^2$

where  $\sigma$  is 'sigma' = 'Standard Deviation' =  $(P-O)/6$  (Approximation)

$1\sigma = 68.26$

$2\sigma = 95.46$

$3\sigma = 99.73$

$6\sigma = 99.9997$

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# What Our Students Are Saying:

Bill has been an excellent mentor. He guided me through every step. I completed his e-learning course as well as attended some of his group sessions. His exam preparation material made navigating through the PMBOK guide very easy and much more interesting. I am a big fan of his ITTO drag and drop exercises.

— **RASHI TALWAR, POSTDOCTORAL RESEARCH FELLOW AT ARGONNE NATIONAL LABORATORY**

“I highly recommend Bill Baxter’s Project Road Training program! He breaks down the material in an easy to understand format and helps you focus on what is truly important. Even throughout my studies, I began to leverage what I was learning in my day to day routine. Not only is Bill a fantastic teacher, he also provides support every step of the way.”

— **NICOLE BONO, PMP, DIRECTOR, PROJECT MANAGEMENT**

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# Contact Us



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# Thank You!

To pass the PMP® exam requires sustained effort. You can expect it to take three months to prepare for the exam. It is critical that you put in a consistent minimum of 8 quality hours per week.

If you make the commitment, *then really make it!* Create a written plan and measure your progress against that plan. For three months, make this project your top priority. The more you can focus and keep your head in the game, the more likely you are to actually succeed.

Carve out three months where nothing 'extra' is going on.

Stay focused. Work hard and smart.

You can do it! Be a Driving Force!

Bill B.

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