Cost, budget and finance

Five formulas, each with a worked example, then the model sheets. They serve IPMA, PMI and APM exams alike; APM's PMQ asks more for the purpose than for the arithmetic.

FORMULAS

Cost aggregation

work estimate = Σ work packages = Σ control accounts = Σ cost types

A control account groups work packages under one owner, who tracks their cost. Rows and columns must reach the same total.

`Example: Control accounts €94k + €328k + €114k + €40k = €576k = supplier €420k + own staff €156k`

Budget layers

baseline = work estimate + contingency · budget = baseline + reserves

Reserves held above the project manager stay outside the baseline until released through change control.

`Example: €576k of work + €24k contingency = €600k baseline; + €40k change budget = €640k budget`

Cash-flow gap

gap = cumulative spending − cumulative funds released (when positive)

Close a gap early: move a payment or the work, or ask for an earlier release.

`Example: €250k released at the start, the next funds at a gate (a decision point) in month 5; €300k spent by month 4: €50k short`

Forecast of the final cost

forecast = spent + committed + still to come · variance = budget − forecast

Committed: ordered, not yet paid (the ICB4's liabilities). PMI calls the forecast the estimate at completion. Quick check: budget − spent − committed = money left for the work to come.

`Example: €300k spent + €220k committed + €130k to come = €650k: €10k over a €640k budget`

Budget for iterative work

iterations funded = budget for the period ÷ cost per iteration

Most cost per iteration is fixed. When money runs short, fund fewer iterations and deliver the most valuable items first.

`Example: A team costs €30,000 per two-week iteration: a quarter's €180,000 funds 6 iterations`

IN THIS HANDOUT

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026); IPMA International Certification Regulations (ICR) v4.4 (2025)

Key: IPMA = International Project Management Association; ICB4 = IPMA's Individual Competence Baseline; PMI = Project Management Institute; PMBOK® Guide = PMI's body-of-knowledge guide; PMP® = PMI's Project Management Professional; APM = Association for Project Management; PMQ = APM's Project Management Qualification; ICR = IPMA's International Certification Regulations. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on pmi.org. APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects.

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Cost aggregation

Build the budget from the work: estimate, roll the estimates up, then add the reserves.

CONTROL ACCOUNT	SUPPLIER	CITY	TOTAL
Design (months 1–2)	60	34	94
Build and integrations (3–5)	300	28	328
Migrate, test, train (6–8)	60	54	114
Project management	0	40	40
Work estimate	**420**	**156**	**576**

Illustrative, € thousand. City: staff, training, licences, €12k overheads. On top: €24k contingency, €40k change budget.

WHAT IT IS

Estimate each **work package** with the people who will do it. Group the packages into **control accounts**, each with one owner, where budget, schedule and actual costs are compared. Cost types form the columns, so rows and columns must reach the same total. Map each account to the organisation's accounts. PMI (Project Management Institute) calls this roll-up cost aggregation.

HOW IT WORKS

01 Estimate each work package with the people doing it.

02 Sort the costs: direct or indirect, fixed or variable.

03 Group packages into control accounts; totals must match.

04 Challenge for optimism; add each reserve on its own line.

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team has eight months to move resident parking permits online, with a supplier on a €420k fixed price.

The project manager estimates each work package with the team and the supplier, in four control accounts: supplier €420k + the city's staff, training and overheads €156k = €576k. Contingency and a change budget for approved changes get their own lines: €576k + €24k + €40k = €640k.

In the exam: Show the build-up from work packages, with each reserve on its own line. Make the totals add up.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months, with two suppliers, nine owners of old systems and a base estimate of €11.5m.

The project manager sets one cost structure for all, with a control account per phase and contract. A review challenges the estimates for optimism before the steering board approves the phases: €2.7m + €3.6m + €3.6m + €1.6m = €11.5m.

In the exam: Explain who estimates, how estimates are challenged, and who may move money between accounts.

WHERE IT SITS

IPMA · ICB4	PMI · *PMBOK® GUIDE* 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.5.7.1 cost structures; 4.5.7.2 budgets on the cost breakdown; 4.5.7.4 aggregating work packages	Guide: Develop Budget, cost aggregation (§2.4.2.3, p. 64); control accounts (p. 140). Exam outline: Process, task 6	BoK (APM's Body of Knowledge) §5.8.1 Cost planning (cost types, optimism bias); cost breakdown structure (§5.2.1). PMQ (APM's Project Management Qualification) objective 22a

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026)

Key: IPMA = International Project Management Association; ICB4 = IPMA's Individual Competence Baseline (4.5.7 etc.: its competence elements); PMBOK® Guide = PMI's body-of-knowledge guide; PMP® = PMI's Project Management Professional; APM = Association for Project Management. PMP® exam facts are from PMI's public PMP® Examination Content Outline (2026); check the current version on pmi.org. APM's qualifications are its own; this series is not an APM Accredited Provider or APM Endorsed. Examples use a fictional city and its projects. Levels (this series' labels): Mid-level = moderately complex projects (IPMA Level C, PMI's PMP®); Senior = complex projects and people (IPMA Level B, APM's Chartered Project Professional).

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Reserves in the budget

Layer the reserves on top of the work estimate, each with its purpose and the person who may release it.

LAYER	€ THOUSAND	COVERS	RELEASED BY
Work estimate	576	The planned work	Spent through the plan
+ Contingency	24	Known risks in the register	Project manager, under a rule
= Cost baseline	**600**	**What progress is measured against**	**Changed only by change control**
+ Change budget	40	Approved changes only	The steering group
= Budget	**640**	All the sponsor approved	More needs a new decision

Illustrative city project. Say whether contingency sits inside the baseline. Large projects add a management reserve.

WHAT IT IS

A budget has layers. The **work estimate** pays for the planned work. **Contingency** covers known risks; the project manager draws on it under an agreed rule. Together they form the **cost baseline**. Money held above the project manager, such as a **change budget** or a management reserve for risks nobody has found, stays outside it. Released money moves the baseline through change control.

HOW IT WORKS

01 Size contingency from the risk register or a simulation.

02 Agree who releases each layer, up to what amount.

03 Report each balance separately at every review.

04 Return what is unused at the end.

MID-LEVEL · WORKED EXAMPLE

Apply it well

The situation: A city team has eight months and €640k to move resident parking permits online, including €24k of contingency and a €40k change budget for approved changes.

The project manager proposes a rule: she draws contingency for register risks and reports each draw. The steering group, which holds the change budget, approves a €24k feature from it: the baseline rises from €600k to €624k, and €16k is left.

In the exam: Name each layer, what it covers and who releases it. Keep change money apart from risk money.

SENIOR · WORKED EXAMPLE

Design and lead it

The situation: A city is joining 14 online services under one login over 30 months: a €13.5m budget with €11.5m of work, €1.2m of contingency and a €0.8m management reserve.

The project manager may commit up to €40k per decision from contingency; larger draws go to the steering board. The city's chief executive holds the €0.8m reserve. Cost baseline: €11.5m + €1.2m = €12.7m.

In the exam: Design release rules as governance: thresholds, evidence, reporting and who can say no. Plan to return unused money.

WHERE IT SITS

IPMA · ICB4	PMI · *PMBOK® GUIDE* 8 · PMP® EXAM	APM · BOK 8 · PMQ EXAM
4.5.7.2 contingencies in the budget for uncertainties, risks and claims; contingency approaches (4.5.7)	Guide: cost baseline, contingency and management reserve (§2.4.1, p. 60). Exam outline: Process, task 6	BoK (APM's Body of Knowledge) §5.8.3 Contingency management: planned contingency, management reserve, drawdown (using it). PMQ (APM's Project Management Qualification) objective 22

Sources: IPMA ICB4 (2015); PMI, PMBOK® Guide, 8th ed.; PMI, PMP® Examination Content Outline (2026); APM Body of Knowledge, 8th ed.; APM, PMQ handbook (v6, 2026)