Procurement Management

TWELVE

A very experienced student in an RMC class was upset about a situation at work. He said he had arranged a meeting with a seller, and the seller did not show up. He then rescheduled the meeting, and the seller still did not show up. When the instructor asked what kind of contract he was working with, the student had to contact his office to find out he had a fixed-price contract. The instructor then asked him where in the contract it said the seller had to attend such meetings. After some investigation, the student determined that meetings were not listed in the contract. Why would a seller attend a meeting if he was not getting paid for it?

Think about what procurement management means on a project. We are not talking about the role of an attorney or a contracting or procurement office. We are talking about the project manager's role.

The basic procurement management skills required of a project manager include being able to help create, read, and manage contracts and any supporting documentation.

For some people, procurement management is one of the hardest knowledge areas on the exam. If you have worked with contracts before, you might have to fine-tune your knowledge and learn new terms for what you already do. You might also have to understand the project manager's role a little better, but you should score well on these questions. If you are like many other people, however, you may have little experience in procurement. Regardless of your real-world experience, the PMP exam will test you as if you were an expert. This chapter walks you through the procurement process and suggests ways you can most effectively study this topic and prepare for the exam.

QUICKTEST

- Procurement management process
- Procurement management plan
- Procurement strategy
- Types of agreements
- Contract types
  - Fixed-price
  - Time and material
  - Cost-reimbursable
- Advantages/disadvantages of each contract type
- Contract change control system
- Termination
- Bid documents
- Make-or-buy analysis
- Source selection criteria
- Noncompetitive forms of procurement
- Types of procurement SOW
- Procurement performance review
- Claims administration
- Closed procurements
- Bidder conferences
- Proposal evaluation
- Risk and contract type
- Make-or-buy decisions
- Weighting system
- Screening system
- Independent cost estimates
- Incentives
- Special provisions
- Standard contract
- Terms and conditions
- Change requests
- Breach
- Waivers
- Claims
- Product validation
- Procurement conflicts
- Procurement audit
- Formal acceptance
- Records management system
- Privity
- Qualified seller list
- Centralized/decentralized contracting
- Price
- Profit
- Cost
- Target price
- Sharing ratio
- Ceiling price
- Letter of intent
- Presentations
- Nondisclosure agreement
- What makes a legal contract
- Force majeure

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Procurement Management TWELVE

INITIATING

- Select project manager
- Determine company culture and existing systems
- Collect processes, procedures, and historical information
- Divide large projects into phases or smaller projects
- Understand business case and benefits management plan
- Uncover initial requirements, assumptions, risks, constraints, and existing agreements
- Assess project and product feasibility within the given constraints
- Create measurable objectives and success criteria
- Develop project charter
- Identify stakeholders and determine their expectations, interest, influence, and impact
- Request changes
- Develop assumption log
- Develop stakeholder register

PLANNING

(This is the only process group with a set order.)

- **Determine development approach, life cycle, and how you will plan for each knowledge area**
- Define and prioritize requirements
- Create project scope statement
- **Assess what to purchase and create procurement documents**
- Determine planning team
- Create WBS and WBS dictionary
- Create activity list
- Create network diagram
- Estimate resource requirements
- Estimate activity durations and costs
- Determine critical path
- Develop schedule
- Develop budget
- Determine quality standards, processes, and metrics
- **Determine team charter and all roles and responsibilities**
- Plan communications and stakeholder engagement
- Perform risk identification, qualitative and quantitative risk analysis, and risk response planning
- **Go back—iterations**
- **Finalize procurement strategy and documents**
- Create change and configuration management plans
- **Finalize all management plans**
- **Develop realistic and sufficient project management plan and baselines**
- Gain formal approval of the plan
- Hold kickoff meeting
- **Request changes**

EXECUTING

- Execute work according to the project management plan
- Produce product deliverables (product scope)
- Gather work performance data
- **Request changes**
- Implement only approved changes
- Continuously improve; perform progressive elaboration
- Follow processes
- Determine whether quality plan and processes are correct and effective
- Perform quality audits and issue quality report
- Acquire final team and physical resources
- Manage people
- Evaluate team and individual performance; provide training
- Hold team-building activities
- Give recognition and rewards
- Use issue logs
- Facilitate conflict resolution
- Release resources as work is completed
- Send and receive information, and solicit feedback
- Report on project performance
- Facilitate stakeholder engagement and manage expectations
- Hold meetings
- **Evaluate sellers; negotiate and contract with sellers**
- **Use and share project knowledge**
- Execute contingency plans
- **Update project management plan and project documents**

MONITORING & CONTROLLING

- **Take action to monitor and control the project**
- Measure performance against performance measurement baseline
- **Measure performance against other metrics in the project management plan**
- **Analyze and evaluate data and performance**
- **Determine if variances warrant a corrective action or other change request(s)**
- **Influence factors that cause change**
- **Request changes**
- Perform integrated change control
- Approve or reject changes
- **Update project management plan and project documents**
- Inform stakeholders of all change request results
- Monitor stakeholder engagement
- Confirm configuration compliance
- Create forecasts
- Gain customer's acceptance of interim deliverables
- Perform quality control
- Perform risk reviews, reassessments, and audits
- Manage reserves
- **Manage, evaluate, and close procurements**
- Evaluate use of physical resources

CLOSING

- Confirm work is done to requirements
- Complete final procurement closure
- Gain final acceptance of product
- Complete financial closure
- Hand off completed product
- Solicit customer's feedback about the project
- Complete final performance reporting
- Index and archive records
- Gather final lessons learned and update knowledge bases

Rita's Process Chart™
Procurement Management
Where are we in the project management process?

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TRICKS OF THE TRADE® The *PMBOK® Guide* uses the terms "contract" and "agreement," so you need to be prepared to see both on the exam and understand what each means. Contracts can be written or verbal, are typically created with an external entity, and involve an exchange of goods or services for some type of compensation (usually monetary). The contract forms the legal relationship between the entities; it is mutually binding and provides the framework for how a failure by one side will be addressed and ultimately remedied in court.

The broader term "agreement" encompasses documents or communications that outline internal or external relationships and their intentions. A contract is a type of agreement, but an agreement isn't necessarily a contract. Imagine that the international division and the US division of a company want to leverage their resources to achieve a shared strategic objective; they would create an agreement, but likely not a contract. Agreements can be used to express and outline the intentions of projects. The charter and the project management plans are examples of agreements that are not contracts; they are internal agreements. Some other examples of agreements are service level agreements, memos of intent, letters of intent, letters of agreement, emails, and verbal agreements.

So what does this mean for you? The way you communicate, escalate, and solve problems will vary depending on whether your actions are governed by a contract or an internal agreement. For example, notifying a seller of a default on a contract term or condition should be done through formal written communication to create a record and ensure appropriate legal action can be taken if necessary. In comparison, for an internal agreement, failure to meet a term of the agreement might be handled in a conversation followed up by an email. For the exam, understanding whether a situational question describes an internal agreement or a contract with an outside party might help you select the right answer. In this chapter, we primarily use the term "contract," because the procurement process is used to acquire necessary resources that are outside the project team and involve legal documents between the buyer and seller.

TRICKS OF THE TRADE® If you have little or no experience working with contracts, you should obtain from your company some sample contracts, requests for proposals, and the resulting sellers' proposals. Spend some time reviewing them before reading on. It might also be valuable to contact your organization's contracts, procurement, or legal department. The exam assumes that you have a close working relationship with these departments, that as a project manager you have specific involvement in the procurement process even if you do not lead that process, and that the procurement process cannot occur without your involvement. You have an opportunity to build an extremely worthwhile relationship with these other departments when you ask, "What should I know about contracts?" Plus, you can improve your working relationship by explaining the project management process to them. Try it!

The following should help you understand how each part of procurement management fits into the overall project management process:

The Procurement Management Process	Done During
Plan Procurement Management	Planning process group
Conduct Procurements	Executing process group
Control Procurements	Monitoring and controlling process group

Overview of the Procurement Management[1] Process

Typically, procurement is a formal process to obtain goods and services. Private companies have a lot of flexibility in their procurement practices. Because government entities are spending public funds, however, they normally have to comply with laws, rules, and regulations that specifically govern each step of the procurement process. Private companies that use public funds from the government may also be required to comply with some

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or all of these regulations. If the work or result of the project is regulated (as in medical, pharmaceutical, food manufacturing, or construction, for example), the laws and regulations must be adhered to.

To help you better understand procurement, we will start with an overview of the process. Do not just read the description provided! Instead, imagine what it would take to make this happen in the real world. The rest of this chapter discusses the process in more detail. Make sure you understand the overview and can generally describe the procurement process before you continue reading the chapter. Know that there can be multiple procurements on a project and that this process is done for every procurement on the project. Also, remember that contract life cycles begin and end throughout the life of a project.

When a project is planned, the scope is analyzed to determine whether the entire project scope can be completed internally, or if any of the work, deliverables, materials, equipment, etc. will need to be outsourced. This analysis results in make-or-buy decisions. If one or more procurements are needed, the procurement department gets involved in the project to manage the procurement process.

This department may also be referred to as the contracting, purchasing, or legal department, but for simplicity, we'll call it the "procurement department." Managing procurements requires legal knowledge, negotiation skills, and an understanding of the procurement process. Although project managers are not often expected to take the lead in legal matters, negotiations, or managing the procurement process, they must be familiar with all of these aspects of procurement. Project managers must understand what the procurement experts will need from them, provide the experts with that information, and then work with the procurement department throughout the life of the procurements. If there is not a procurement department in the organization, the responsibilities of managing procurements are assumed by the project manager.

When a decision has been made to procure goods or services from an outside source, the project manager will facilitate the creation of a plan for the overall procurement process (a procurement management plan), a plan for how each contract will be managed (a procurement strategy), and a description of the work to be done by each seller (a procurement statement of work).

The procurement department may review the scope of the work for completeness (always a good idea), and the project manager might add scope related to project management activities (such as specific reporting requirements or required attendance at meetings), resulting in the finalized procurement statement of work. This procurement statement of work should be combined with the contract terms to make up the finalized bid documents (RFP, RFI, or RFQ) that are sent to prospective sellers. All of these make up common procurement documents.[2]

The procurement manager will determine what type of contract, bid document, and statement of work should be used. The most common bid documents are request for proposal (RFP), request for information (RFI), and request for quotation (RFQ). The type of bid document used is influenced by the contract type selected and the content within the procurement statement of work. As you will see later in this chapter, different types of contracts require project managers to focus their management activities on different areas.

At this point, the prospective sellers take action, and the buyer waits for their responses. The prospective sellers review the bid documents and determine whether they are interested in submitting a response or proposal to try to win the work. They may have the opportunity to participate in a bidder conference or a pre-proposal meeting. As part of the procurement process, prospective sellers may also have the opportunity to submit questions; buyer responses are then shared with all prospective sellers. As a best practice, all questions should be in writing and should relate to the bid documents. Sellers need to submit these questions to the buyer before the submission deadline for bids or proposals.

The prospective sellers carefully review the buyer's statement of work and all the terms of the proposed contract contained in the bid documents, including the selection criteria. During this review, the sellers develop a full understanding of what the buyer wants, and assess the risks involved in the project. If the

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scope is incomplete or unclear, if a prospective seller is aware of the buyer having a history of poorly managing projects, or if any other risks are identified, a prospective seller may decide not to respond, or may adjust the price and/or schedule submitted to the buyer to account for these risks. When a fixed-price contract is required, sellers should include these risks in the total detailed cost estimate, as well as other costs, such as overhead, and then add profit to come up with a bid or quote. In any case, the risk of the project is formally or informally assessed before sending the bid or proposal to the buyer. (Do you see the increased risk for the seller caused by unclear requirements if the seller does not get completely defined data before bidding on the work?)

The amount of time that a prospective seller may need to respond to the bid documents can be substantial (sometimes taking several months), and the buyer's project manager must plan this time into the project schedule.

Organizations may use several different methods to select a seller. These methods may be dictated by law or internal policies. If a buyer receives competing submissions from many prospective sellers, the buyer might ask for presentations from all the candidates. Another option is to shorten the list of prospective sellers first and then request presentations. If presentations will not add value for the buyer, the buyer may just move into negotiations with the preferred seller or sellers. All terms and conditions in the proposed contract, the entire procurement statement of work, and any other components of the bid documents can be negotiated. Negotiations can take a lot of time, and they require the involvement of the project manager.

At the end of negotiations, one or more sellers are selected, and a contract is signed. The procurement management plan and procurement strategy created earlier may also be updated.

Once the contract is signed, the procurement must be managed and controlled. This involves making sure all the requirements of the contract are met. It also means keeping control of the contract and making only approved changes. As the procurement work is being completed, questions may arise, such as, "What is and what is not in the contract?" or "What does a particular section of the contract really mean?" The procurement department will help the project manager resolve these issues.

When the procurement work is complete, the procurement will be closed. The required actions to close each procurement need to be done soon after the final deliverables of the procurement are accepted. This can happen within any phase of the project life cycle, as the contracted work is completed. For example, in a project to renovate a house, a seller may be contracted to install new plumbing, another may be contracted to install new landscaping, and still another may be contracted to paint the house. Activities to close out a procurement include an analysis of the procurement process to determine lessons learned (formally called a procurement audit). Final reports are submitted, lessons learned are documented, and final payment is made.

Could you now describe the procurement process to someone else? Be sure this overview makes sense to you before continuing with the chapter.

Buyers and Sellers In the real world, the company or person who provides services and goods can be called a contractor, subcontractor, supplier, designer, or vendor. The *PMBOK® Guide* primarily uses the term "seller," but the exam may use any of the above terms. The company or person who purchases the services is called the buyer. Many companies are a buyer in one procurement and a seller in another.

TRICKS OF THE TRADE® Read exam questions carefully to see if the situation described in the question is from the buyer's or seller's point of view. If no point of view is mentioned, assume you are on the buyer's side of the project. Make sure you know the actions that you would take as the project manager for the buyer. This is an especially important concept to understand when taking the exam. If you are on the seller's side of the project, the issues and impacts of many situations are completely different.

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TRICKS OF THE TRADE® For large projects, sellers will typically provide the full complement of a solution, rather than just augmenting a project team with additional resources. For example, whereas on a small or medium-size project, you might add contract developers to your internal staff to do the coding, on a large project you would likely outsource all that development work to an external resource who would plan and manage all developers, testers, etc. Unless an exam question indicates otherwise, assume the seller is providing all of the work external to the buyer's team rather than supplying resources to supplement the team.

TRICKS OF THE TRADE® **Tricks for Answering Procurement Questions** When answering situational questions involving contracts, keep in mind the following general rules, especially if the answer to the question is not immediately apparent:

- Contracts require formality. What this means is that any correspondence, clarification, and notifications related to the contracts should be formal written communication, which can be followed up with verbal communication, if necessary. If issues develop that require arbitration, mediation, or litigation, the formal written communications will be more enforceable and supportable than verbal communications.
- All product and project management requirements for the procurement work should be specifically stated in the contract.
- If it is not in the contract, it can only be required to be done if a formal change order to the contract is issued.
- If it is in the contract, it must be done or a formal change order to remove it must be approved by both parties.
- Changes to contracts must be submitted and approved in writing.
- Contracts are legally binding; the seller must perform as agreed in the contract, or face the consequences for breach of contract.
- Contracts should help diminish project risk.
- Most governments back all contracts that fall within their jurisdiction by providing a court system for dispute resolution.

Remembering these pointers can help you get about four more questions right!

TRICKS OF THE TRADE® **Note to Students Outside the United States** In the past, the PMP exam has had very few references to international contracts. Be aware that government contracting specialists in the United States wrote many of the questions on the exam. PMI's process for procurement management closely follows what is done in the United States, but it is different from the way procurement is handled in other parts of the world. In many places, the contract is an informal document, and the relationship between the parties is more important than the contract. If you are not from the United States, a key trick is to take a more formal approach to the procurement process when answering questions. The contract is most important. It must be followed, and everything provided in it must be done. Study this chapter carefully.

Centralized/Decentralized Contracting In a centralized contracting environment, there is one procurement department, and the procurement manager reports organizationally to the head of the procurement department, not to the project manager. The procurement manager may handle procurements on many projects. When working with a procurement manager, you should know what authority the procurement manager has and how the procurement department is organized. In a centralized contracting environment, the project manager contacts the department when they need help or to ask questions.

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In a decentralized contracting environment, there is no procurement department or procurement manager assigned. The project manager may be responsible not only for creating the procurement management plan but also for conducting and monitoring work on all procurements. There may be little standardization of procurement processes and contract language without a procurement department to regulate standards, improve knowledge, and increase professionalism in procurement management.

TRICKS OF THE TRADE When answering exam questions, assume a centralized contracting environment unless otherwise stated. Remember that whether contracting is centralized or decentralized, the project manager is responsible for knowing their required level of involvement. Use the scenario described in the question to determine how involved the project manager should be.

Try the following exercise.

Exercise Identify the advantages and disadvantages of a centralized contracting environment. This exercise will help you recognize a centralized contracting environment when taking the exam.

Centralized Contracting	
Advantages	Disadvantages

Answer

Centralized Contracting	
Advantages	Disadvantages
Because they are part of a department that focuses on procurements, centralized contracting can result in procurement managers with higher levels of expertise.	One procurement manager may work on many projects, so this individual must divide their attention among all of those projects. The procurement manager will likely have less time to spend working on your project and understanding its unique needs, and is more likely to forget important details about the project.

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Centralized Contracting	
Advantages	**Disadvantages**
A procurement department will provide its employees with continuous improvement, training, and shared lessons learned.	It may be more difficult for the project manager to obtain contracting help when needed.
Standardized company practices allow efficiency and help improve understanding.	
Individuals in this department have a clearly defined career path in procurement.	

The Project Manager's Role in Procurement

You might ask yourself, "If there is a procurement manager, why would a project manager need to be involved in procurements?" This is an important question, and you must fully understand the answer before you take the exam. Here are a few tricks to help you.

TRICKS OF THE TRADE Remember that it is the project manager's project. There are certain things that cannot be done effectively without the project manager, and the project manager's expertise is needed so the organization can fully realize the project's benefits. This is so important that typically a large percentage of the questions on the exam are focused on testing whether you know what you should do.

Here is a quick summary. Do not memorize it; instead, make sure you understand it.

- Know the procurement process so you understand what will happen when and can make the necessary plans.
- Make sure the contract includes all the scope of work and all the project management requirements, such as attendance at meetings, reports, actions, and communications deemed necessary to minimize problems and miscommunications with the seller(s).
- Identify risks, and incorporate mitigation and allocation of risks into the contract to decrease project risk.
- While it is being written, help tailor the contract to the unique needs of the project.
- Estimate the time and cost of each procurement, including the time required to complete the procurement process, and include these estimates in the project schedule and budget.
- Be involved during contract negotiations to protect the relationship with the seller. A contentious negotiation process—often created when the seller feels that they have had to give up too much profit or agree to terms and conditions they do not like in order to win the contract—can create a win-lose relationship with the procurement manager and the seller, which can negatively affect the project. The project manager will have to manage the seller's delivery to the contract, and bad feelings on the part of the seller can create extra challenges. By staying involved in the negotiations, the project manager can promote the best interests of the project.
- Protect the integrity of the project and the ability to get the work done by making sure the procurement process goes as smoothly as possible.
- Understand what contract terms and conditions mean so you can read and understand contracts. This will help you plan and manage the monitoring and controlling of procurements.
- Help make sure all the work in the contract is done, such as reporting, inspections, and legal deliverables, including the release of liens and ownership of materials, not just the technical scope.
- Do not ask for something that is not in the contract without making a corresponding change to the contract.
- Work with the procurement department to manage necessary changes to the contract.

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TRICKS OF THE TRADE Project managers should be assigned on both the buyer's and seller's sides before a contract is signed! Many companies that sell their services make a huge but common mistake by not involving the project manager in the bidding and proposal process. Instead, only marketing and sales are involved until after the contract is signed. The project manager is then handed a project with a contract that may include unrealistic time or cost constraints. The project starts out in trouble.

Involving the project manager early in the procurement process is so important that the exam will test you to see if you know when the project manager should be involved, and why. For example, the project manager is often uniquely capable of answering (or getting answers to) many of the technical and project management questions that arise during bidder conferences. If the sellers' questions are answered incorrectly or incompletely, there may be an inadvertent change to a specification or the scope of the contract that was never intended by the buyer.

The Procurement Management Process

Project managers often tell procurement managers that they need a seller as soon as possible. And procurement managers want project managers to know that there is a procurement process designed to obtain the best seller at the most reasonable price. That process includes the time it takes for sellers to look at your needs and respond, which can take several months. Understanding the procurement process includes understanding why this time must be accounted for within the project schedule. It is a critical part of both the procurement process and the procurement concepts that are tested on the exam. Not only does the project manager need to be involved along the way, assisting the procurement department with project input, they must also plan for the amount of time procurements take. The remainder of this chapter follows the procurement process from start to finish. You must know what happens when, how procurement management works on a properly managed project, and how it relates to the project life cycle and the project management process.

The three procurement management processes are:

1. Plan Procurement Management
2. Conduct Procurements
3. Control Procurements

Plan Procurement Management PAGE 466

Process Plan Procurement Management
Process Group Planning
Knowledge Area Procurement Management

The Plan Procurement Management process answers these questions: "How will make-or-buy analysis be performed?" "What goods and services do we need to buy for this project?" "How will we purchase them?" "Who are potential sellers to consider?"

This process involves putting together the bid documents that will be sent to prospective sellers describing the buyer's need, how to respond, and the criteria the buyer will use to select a seller. Note that the term "bid documents" is used in reference to requests for proposal (RFPs) and requests for quotation (RFQs). You may also see the term used in reference to requests for information (RFIs) as well as invitations for bid (IFBs).[3]

Allowing adequate time for the procurement process is critical to project success.

The Plan Procurement Management process includes the following activities:

- Performing make-or-buy analysis[4]
- Creating a procurement management plan
- Creating a procurement strategy for each procurement
- Creating a procurement statement of work for each procurement

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- Selecting the appropriate contract type for each procurement
- Creating the bid documents
- Determining the source selection criteria

Inputs to Plan Procurement Management

PAGE 468 When planning procurement management, it is important to consider business documents like the benefits management plan and the business case. Also keep in mind the project charter, components of the project management plan, project documents, and any relevant enterprise environmental factors and organizational process assets. Review these inputs in the following sections to determine what is needed before you begin planning procurement management.

Project Charter

You'll need to review important information found in the project charter, such as any preapproved financial resources, the overall project description, and the project objectives, in order to create the procurement management plan.

Business Documents

Important business documents that are inputs to the Plan Procurement Management process include the following:

- The benefits management plan lists the benefits of the project and details when they are to be delivered. This information is used to determine what procurements are needed, when procurements must be entered into, and what dates should be included in the bid documents and, ultimately, project contracts.
- The business case reflects the reason the project was undertaken, and must be in alignment with the procurement strategy.

Project Management Plan

The components of the project management plan, including the scope, quality, and resource management plans as well as the scope baseline, help those involved in the procurement process identify where procurements are necessary and understand any constraints on potential procurement efforts.

Project Documents

Documents such as the milestone list and the requirements traceability matrix can help you plan procurement management. You'll also want to review the project schedule and any relevant procurements already in place. Other documents used to plan procurements include the following:

- **Project team assignments** Team assignments will include information on who can help the project manager with procurement planning. If the project team does not have the necessary skills—such as developing bid documents—to complete procurement management activities, team members may require training or need assistance from the procurement department or outside sources.
- **Requirements documentation** This is where you'll find the scope-related requirements that will help to define the end product, service, or result provided by a seller. In addition, this documentation includes requirements for compliance, safety, communications, project management practices, reporting, quality, and risk management that are likely to be important to the procurement process.
- **Resource requirements** Resource requirements describe the skills, number, and type of resources that will be needed on the project. If the required team resources, products, materials, equipment, or services are not available within the performing organization, they will need to be procured.
- **Risk register** The risk register provides an understanding of the individual and overall project risks uncovered to date, as well as the risk responses that involve procurements. Remember, risk analysis of the project should be done before contracts are signed.

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- **Stakeholder register** The stakeholder register will help identify those who will be impacted by the procurement process as well as those who will have input into or will guide this process, such as the procurement manager, regulatory bodies, and attorneys.

Enterprise Environmental Factors These factors include company culture and existing systems your project will have to deal with or can use. For procurement, they include marketplace conditions, the services that are available to be purchased, and the existing culture and structures surrounding the organization's approach to procurements.

Organizational Process Assets The organizational process assets that are used in procurement can include procurement procedures and documents, standard contract types used by the organization, statement of work templates, lessons learned from past procurements and projects, and lists of prequalified sellers. Note that selecting the right contract type for each procurement is critical to the success of the project. We will define the most common contract types and discuss their advantages and disadvantages later in this chapter.

Preapproved Seller List The process of finding prospective sellers can take months. Another option, especially if a buyer purchases the same type of service often, is to identify and check the credentials of prospective sellers in advance, and maintain a list of preapproved sellers. This will speed up the purchase and help ensure the sellers' qualifications are well researched before they are awarded procurements. If such a list is in place (as part of organizational process assets), the procurement documents for specific projects are then sent only to the preapproved sellers. The preapproved seller list is also sometimes referred to as a prequalified seller list.

Some organizations use master service agreements, which are contracts between two parties including standard terms that will govern future transactions. This is a time-saving approach when a buyer frequently works with the same seller. The overall terms of working together are already agreed to and signed by both buyer and seller. Terms may include the types of services or goods that are included in the agreement, costs, and payment and delivery terms.

Exercise Now try to recreate what you just read. If you miss any of the inputs, spend some time thinking about these items to make sure you do not forget them when taking the exam.

List the Plan Procurement Management Process Inputs	

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There are two primary types of analysis that can be useful during the Plan Procurement Management process: make-or-buy analysis and source selection analysis. Let's review both.

Make-or-Buy Analysis PAGE 473 During planning, you must decide whether the project team will do all of the project work, or if some or all of the work will be outsourced. You will also need to determine if all required materials or equipment are available within the performing organization. Ask questions like, "How are resources currently distributed?" and "What are the capabilities of our resources?" The answers to these types of questions can help you find out information about what can be done internally, and what will need to be done by or procured from outside resources. Make-or-buy analysis is completed early in the planning process to avoid wasted time planning work that will ultimately be outsourced. Also note that this type of analysis enables make-or-buy decisions, which are documented in the procurement management plan.

Logistics and Supply Chain Management An important consideration in make-or-buy analysis is the required lead time for materials and equipment to be purchased. Specialty items, custom products, and items ordered internationally will take more time, which must be built into the project schedule.

Economic Models Economic models may be used to analyze and support make-or-buy decisions. Examples include the following:

- Payback period
- Return on investment
- Internal rate of return
- Discounted cash flow
- Net present value
- Cost-benefit analysis

Note that these models, which were defined in the Integration Management chapter, are also used in project selection.

Expect to see questions on the exam that refer to make-or-buy analysis, or even questions that require you to calculate buy-or-lease situations, such as:

Question You are trying to decide whether to lease or buy an item for your project. The daily lease cost is $120. To purchase the item, the investment cost is $1,000, and the daily maintenance cost is $20. How long will it take for the lease cost to be the same as the purchase cost?

Answer Let D equal the number of days when the purchase and lease costs are equal.

$120D = $1,000 + $20D
$120D – $20D = $1,000
$100D = $1,000
D = 10

This calculation helps a project manager decide whether it is better to buy or lease. The calculation says that the costs are the same after 10 days. Therefore, if you are planning to use the item for fewer than 10 days, you should lease. If you are planning to use it for more than 10 days, it would be cheaper to buy the item. These costs are then included in the project cost estimate.

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Source Selection Analysis PAGE 473 Determining the criteria that will be used to select a seller is an important part of procurement planning. To make this determination, project constraints must be analyzed. For example, is schedule the most important criteria or is cost the critical factor? You may want to review the project constraints represented in the graphic in the Project Management Framework chapter to get an idea of possible selection criteria.

If the buyer is purchasing a commodity, such as linear meters of wood, the source selection criteria may just be the lowest price. If the buyer is procuring construction services, the source selection criteria may be price plus experience. If the buyer is purchasing services only, the source selection analysis will be more extensive. In the latter case, source selection criteria may include:

- Number of years in business
- Financial stability
- Understanding of need
- Price or life cycle cost
- Technical expertise
- Quality of past performance
- Ability to complete the work on time

If the organization has a preferred seller list, or a master services agreement with an outside source, that information is also considered when analyzing source selection options.

Procurement Management Plan PAGE 475 The procurement management plan documents how procurements will be planned, executed, and controlled. Enterprise environmental factors and organizational process assets will significantly influence this plan. They include the governing approach to procurements for the project, information about how to perform the make-or-buy analysis, and the policies and procedures that will be used in the procurement processes.

The planning portion of the procurement management plan includes standards for selecting the best type of contract to use for each procurement, details of how procurement documents will be created or tailored to meet the needs of the project, and guidelines for establishing selection criteria.

The executing portion of the plan documents how the Conduct Procurements process will flow and outlines the roles and responsibilities of team members as well as the rules for bidder conferences and negotiations.

The control portion of the plan indicates how contract stipulations will be monitored and controlled, and it provides metrics and information on when and how measurements will be taken, guidelines for resolving disputes, the process for accepting deliverables, and the payments to be made.

Make-or-Buy Decisions PAGE 479 Make-or-buy decisions are the result of make-or-buy analysis. Any decisions to "buy" will require the team to follow the procurement management process to obtain needed products, equipment, or services. As the planning process continues, make-or-buy decisions may be adjusted, or may necessitate changes to other parts of the project management plan.

Procurement Strategy PAGE 476 A procurement strategy is developed for each procurement after the make or-buy-analysis has been completed and the goods or services to be acquired from outside the organization have been identified. The acquisition of these goods or services must be incorporated into an overall procurement strategy for the project. This strategy has three basic elements: how goods or services will be delivered to the buyer (for example, will the procurement include any subcontractors or an

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outside service provider), what type of contract will be used (for example, fixed-price or cost plus, and will the contract include incentives or award fees), and how the procurement will be carried out throughout each phase. The project manager must manage the procurement to achieve the objectives of each phase, and also manage transitions between the phases.

Remember that organizational process assets include the types of contract approved for use within the organization. The following pages include descriptions of the contract types and exercises to help you understand when each is best to use. Take your time with this section; it includes a lot of information you will need to know for the exam.

Contract Types[5]

PAGE 471 Many different types of contracts can be used to acquire goods and services on a project. The types of contracts or agreements that are approved for use within an organization are considered organizational process assets. From those contract types, the procurement manager will select the contract type for each procurement based on the following considerations:

- What is being purchased (a product or a service)
- The completeness of the statement of work
- The level of effort and expertise the buyer can devote to managing the seller
- Whether the buyer wants to offer the seller incentives
- The marketplace or economy
- Industry standards for the type of contract used

TRICKS OF THE TRADE® Some contract types can be referred to by more than one name. This can make it difficult to learn the contract types. Here is a trick. Start out by understanding the three main categories of contract types, as shown in the following list. Then, when the exam asks a question relating to contract type, first see if knowing which category the contract is in helps you answer the question. In most cases, it does.

The three broad categories of contracts are:

- Fixed-price (FP)
- Time and material (T&M)
- Cost-reimbursable (CR)

You must understand the contract types and be able to recognize the differences between them. Situational questions on the exam may require you to recognize that the project manager's responsibilities and actions will vary depending on the type of contract being used. There may also be questions that require you to pick the most appropriate contract type based on a particular situation. Think through this section carefully!

Fixed-Price (FP)

A fixed-price contract should be used for acquiring goods, products, or services with well-defined specifications or requirements. In general, with a fixed-price contract, a clearly defined statement of work along with competing bids mean you're likely to get a fair and reasonable price. This is one of the most common types of contract, though it's less likely to be used in something like information technology than in construction. If the costs are more than the agreed-upon amount, the seller must bear the additional costs. Therefore, the buyer has the least cost risk in this type of contract because the scope is well-defined. (Note, however, that when fixed-price contracts are entered into and the statement of work is not sufficiently detailed, claims and disputes over what is in and out of the contract create higher risk of cost overruns or delay.) The seller is most concerned with the procurement statement of work (SOW) in a fixed-price contract. This is going to help them accurately estimate time and cost for the work involved, and allow them to determine a price that includes a fair and reasonable profit. The amount of profit is not disclosed to the buyer in this contract type. Types of fixed-price contracts include firm fixed price, fixed

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price incentive fee, fixed price award fee, and fixed price with economic price adjustments. Purchase orders are also a type of fixed-price contract.

For the exam, be aware that even though the buyer may prefer a fixed-price contract as a way to control costs, it is not always the best choice, and in some cases, it may be inappropriate. Sellers in some industries may not have the detailed accounting records of past project activities required to accurately estimate future projects. Buyers may not have the expertise to prepare the clear and complete procurement statement of work required for a fixed-price contract.

Because many buyers are not knowledgeable about contracts, they often ask the seller to provide a fixed price, even when the scope of work is incomplete. In such a case, the procurement statement of work is not really adequate for the seller to make a reasonable estimate of required costs and time. Think for a minute about the following consequences of doing this:

- The seller is forced to accept a high level of risk.
- The seller needs to add a significant amount of reserves to their price to cover their risks; therefore, the buyer pays more than they otherwise might have.
- The seller can more easily try to increase profits by cutting scope or claiming that work the buyer wants is outside the contract and thus requires a change order. The buyer will not be able to state with certainty if something is within the scope of the work or outside of it (and, therefore, needs a change order and additional payment to the seller) if there is not a complete procurement statement of work.

If a fixed-price contract is used when it shouldn't be—and the seller realizes they will not be able to make any profit on the project—the seller might try to take their best people off the project, cut out work that is specifically mentioned in the contract, cut out work that is not mentioned in the contract but is needed, decrease quality, or take other actions to save themselves money.

The following sections discuss some of the most common forms of fixed-price contracts.

Fixed-Price (FP) In a FP contract, a fixed total price is set for the project, all requirements have been clearly described, and changes to scope should not occur.

Example: Fixed-Price Contract

Contract = $1,100,000.

Fixed Price Incentive Fee (FPIF) In a FPIF contract, profits (or financial incentives) can be adjusted based on the seller meeting specified performance criteria, such as getting the work done faster, cheaper, or better. The final price is calculated using a formula based on the relationship of final negotiated costs to the total target cost. (See more on incentives later in this section.) A variation on a FPIF is a FPIF Successive Target contract, in which the target for the incentive is changed after the first target is reached.

Example: Fixed Price Incentive Fee Contract

Contract = $1,100,000. For every month early the project is finished, an additional $10,000 is paid to the seller.

You may need to calculate these incentives for the exam, so make sure you understand the exercises at the end of the contract types discussion in this chapter.

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Fixed Price Award Fee (FPAF) In a FPAF contract, the buyer pays a fixed price plus an award amount (a bonus) based on performance. This is similar to the FPIF contract, except the total possible award amount is determined in advance and apportioned based on performance. For example, the buyer might say there is a maximum $50,000 award fee available. It will be apportioned at the rate of $5,000 for every month production exceeds a certain amount. This is a type of incentive contract. In many instances, the award paid is judged subjectively. Therefore, procedures must be in place in advance for determining the award.

The cost to administer the award fee versus the potential benefits must be weighed in the decision to use this type of contract.

Example: Fixed Price Award Fee Contract

Contract = $1,100,000. For every month that performance exceeds the planned level by more than 15 percent, an additional $5,000 is awarded to the seller, with a maximum award of $50,000.

Fixed Price with Economic Price Adjustments (FPEPA)[6] If a contract will cover a multiyear period, there may be uncertainties about future economic conditions. Future costs of supplies and equipment the seller might be required to provide under contract may not be predictable. In such cases, a buyer might choose a fixed-price contract with economic price adjustments. Think "economy" whenever you see this on the exam, and you should remember it. A similar type of contract is called Fixed Price with Prospective Price Redetermination.

Example: Fixed Price with Economic Price Adjustments Contract

Contract = $1,100,000, but a price increase will be allowed in year two based on the US Consumer Price Index report for year one.

Or

Contract = $1,100,000, but a price increase will be allowed in year two to account for increases in specific material costs.

Purchase Order A purchase order is the simplest type of fixed-price contract. This type of contract is normally unilateral (signed by one party) instead of bilateral (signed by both parties). Most other contract types are bilateral. It is usually used for simple commodity procurements. Purchase orders become contracts when the buyer accepts the terms. The seller then performs or delivers according to those terms (for example, equipment or products). Although unilateral purchase orders are most common, some companies will require the seller's signature on a purchase before the buyer will consider the purchase order official. In that case, it is the signature that forms the acceptance needed to make a contract.

Example: Purchase Order

Contract = 30 linear meters of wood at $9 per meter.

Time and Material (T&M) In this type of contract, the buyer pays on a per-hour or per-item basis. Time and material contracts are frequently used for service efforts in which the level of effort cannot be

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defined when the contract is awarded. It has elements of a fixed-price contract (in the fixed price per hour) and a cost-reimbursable contract (in the material costs and the fact that the total cost is unknown). Compared to other types of contracts, time and material contracts typically have terms and conditions that are simpler, to allow for quick negotiations so that work can begin sooner.

If you were going to have to pay someone on a contract basis for every hour they worked, no matter how productive they were and no matter what they were doing, would you want to do this for a long period of time? Remember, the seller's profit is built into the rate, so they have no incentive to get the work done quickly or efficiently. For this reason, a time and material contract is best used for work valued at small dollar amounts and lasting a short amount of time. Knowing when it's best to use time and material contracts can help you get situational questions right on the exam.

To make sure the costs do not become higher than budgeted, the buyer may add a "Not to Exceed" clause to the contract and thus limit the total amount they are required to pay. With a time and material contract, the buyer has a medium amount of cost risk as compared to cost-reimbursable and fixed-price contracts.

Example: Time and Material Contract

Contract = $100 per hour plus expenses or materials at cost.

Or

Contract = $100 per hour plus materials at $5 per linear meter of wood.

Cost-Reimbursable (CR) A cost-reimbursable contract is used when the exact scope of work is uncertain and, therefore, costs cannot be estimated accurately enough to effectively use a fixed-price contract. This type of contract provides for the buyer to pay the seller allowable incurred costs to the extent prescribed in the contract. Such contracts also typically include an additional fee or award amount added to the cost to allow for seller profit. Types of cost-reimbursable contracts include cost, cost plus fixed fee, cost plus incentive fee, cost plus award fee, cost plus fixed fee, and cost plus percentage of costs.

A cost-reimbursable contract requires the seller to have an accounting system that can track costs by project. With a cost-reimbursable contract, the buyer has the most cost risk because the total costs are unknown. The seller provides an estimate to the buyer; the buyer can use the estimate for planning and cost management purposes, but it is not binding. What is binding is the buyer's responsibility to compensate the seller for legitimate costs for work and materials as described in the contract. Research and development or information technology projects in which the scope is unknown are typical examples of cost-reimbursable contracts.

The following sections discuss some of the most common forms of cost-reimbursable contracts.

Cost Contract A cost contract is one in which the seller receives no fee (profit). It is appropriate for work performed by nonprofit organizations.

Example: Cost Contract

Contract = Cost for work and materials.

There is no profit. With this type of contract, the seller is reimbursed but does not make a profit. Cost contracts are typically used by nonprofit organizations.

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Cost Plus Fixed Fee (CPFF) A cost plus fixed fee contract provides for payment to the seller of actual costs plus a negotiated fee (the seller's profit, usually a percentage of the estimated cost of the project) that is fixed before the work begins. The fee does not vary with actual costs; thus, the seller does not have an incentive to increase or inflate costs. The fee may be adjusted as a result of changes to the procurement statement of work.

Example: Cost Plus Fixed Fee Contract

Contract = Cost plus a fee of $100,000.

Cost Plus Incentive Fee (CPIF) A cost plus incentive fee contract provides for the seller to be paid for actual costs plus a fee that will be adjusted based on whether specific performance objectives stated in the contract are met. In this type of contract, an original estimate of the total cost is made (the target cost) and a fee for the work is determined (a target fee). The seller gets a percentage of the savings if the actual costs are less than the target costs, or shares the cost overrun with the buyer. The ratio is often 80 percent to the buyer and 20 percent to the seller. See more on incentives later in this section.

Example: Cost Plus Incentive Fee Contract

Contract = $500,000 target cost plus $50,000 target fee. The buyer and seller share any cost savings or overruns at 80% to the buyer and 20% to the seller.

You will need to know how to calculate the total payment or profit on a CPIF contract for the exam. See the exercise at the end of this discussion.

Cost Plus Award Fee (CPAF) In a cost plus award fee contract, the buyer pays all costs and a base fee plus an award amount (a bonus) based on performance. This is similar to the CPIF contract, except the incentive is a potential award, and there is no possibility of a penalty. The award amount in a CPAF contract is determined in advance and apportioned depending on performance. This is a type of incentive contract. In some instances, the award paid out is judged subjectively. Therefore, procedures must be in place in advance for determining the award.

As with a FPAF contract, the cost to administer an award fee contract must be weighed against the potential benefits when deciding whether to use this type of contract.

Example: Cost Plus Award Fee Contract

Contract = Cost plus a base fee plus award for meeting buyer-specified performance criteria. Maximum award available is $50,000.

Cost Plus Fee (CPF) or Cost Plus Percentage of Costs (CPPC) A CPF or CPPC contract requires the buyer to pay for all costs plus a percentage of costs as a fee. In the United States, this type of cost-reimbursable contract is generally not allowed for federal acquisitions or procurements under federal acquisition regulations, and it is bad for buyers everywhere. Can you figure out why? If seller profit is based on a percentage of everything billed to the buyer for the project, what incentive is there to control costs? Say a seller has to purchase materials from one of two suppliers. Although the materials from both suppliers meet the

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quality requirements, one supplier charges $4 per unit and the other charges $40 per unit. A seller might be tempted to choose the $40 per unit charge because they will make more profit. It is possible for the buyer to construct the contract so that the seller will need to prove they pursued the least expensive path in completion of the procurement statement of work when, for example, selecting materials or subcontracting portions of work. This contract type requires the buyer to carefully monitor and control all invoices.

Example: Cost Plus Fee or Cost Plus Percentage of Costs Contract

Contract = Cost plus 10 percent of costs as fee.

This brings us to the end of the contract types discussion. Keep in mind that although the buyer initially proposes the contract type, the final contract type is subject to negotiation with the seller. The best contract type meets the needs of the particular procurement, results in reasonable seller risk, and provides the seller with the greatest incentive for efficient performance.

Do you understand what you just read? Can you answer the following questions?

- You do not have a finalized scope. Which contract type is best?
- You do not have a complete scope of work, but you have a fixed-price contract. What problems can you expect to run into?

The exam tests whether you know what to do in different situations, not just if you know definitions.

Incentives Sellers are usually focused on the profits to be made on a project. The buyer may be focused on total cost, performance, schedule, or a combination of these concerns. Incentives are used to bring the seller's objectives in line with the buyer's. The buyer will provide an additional fee if the seller meets some cost, performance, or schedule objectives. Incentives, therefore, are designed to motivate the seller's efforts and to discourage seller inefficiency and waste in the areas in which the incentives are designated. Think of an incentive as a bonus for the seller.

Can you see how incentives can change the focus of the seller's work on the project? If there is an incentive for cost savings, then the work is to complete the project *and* to look for cost savings. If the incentive is for some increased level of performance (the system can handle more capacity than contracted for, for example), then the work is to complete the project *and* to look for ways to increase performance. The seller gains profit from both activities.

Payments Each contract, no matter the type, will state when payments are to be made to the seller. Payments may be made as work is completed and accepted, as costs are incurred, according to a payment schedule, or only after the successful completion of all the work required in the contract. The project manager needs to know when payments must be made in order to plan for the time required to review and make these payments. The project manager must also ensure the funds will be available to make the payments as scheduled.

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Advantages and Disadvantages of Each Contract Type A trick for the exam is to realize that buyers must select the appropriate type of contract for what they are buying. The following exercise will test whether you really understand the different types of contracts and will help you select the appropriate type of contract.

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Exercise In the following table, write the advantages and disadvantages of each form of contract from the perspective of the buyer.

Fixed-Price Contract

Advantages	Disadvantages

Time and Material Contract

Advantages	Disadvantages

Cost-Reimbursable Contract

Advantages	Disadvantages

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Answer There can be more answers than listed here. Did you identify and understand these?

Fixed-Price Contract

Advantages	Disadvantages
This type of contract requires less work for the buyer to manage.	If the seller underprices the work, they may try to make up profits by charging more than is necessary on change orders.
The seller has a strong incentive to control costs.	The seller may try to not complete some of the procurement statement of work if they begin to lose money.
Companies usually have experience with this type of contract.	This contract type requires more work for the buyer to write the procurement statement of work.
The buyer knows the total price before the work begins.	A fixed-price contract can be more expensive than a cost-reimbursable contract if the procurement statement of work is incomplete. In addition, the seller needs to add to the price of a fixed-price contract to account for the increased risk.

Time and Material Contract

Advantages	Disadvantages
This type of contract can be created quickly, because the statement of work may be less detailed.	There is profit for the seller in every hour or unit billed.
The contract duration is brief.	The seller has no incentive to control costs.
This is a good choice when you are hiring "bodies," or people to augment your staff.	This contract type is appropriate only for work involving a small level of effort.
	This contract type requires a great deal of day-to-day oversight from the buyer.

Cost-Reimbursable Contract

Advantages	Disadvantages
This contract type allows for a simpler procurement statement of work.	This contract type requires auditing the seller's invoices.
It usually requires less work to define the scope for a cost-reimbursable contract than for a fixed-price contract.	This contract type requires more work for the buyer to manage.
A cost-reimbursable contract is generally less costly than a fixed-price contract because the seller does not have to add as much for risk.	The seller has only a moderate incentive to control costs.
	The total price is unknown.

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Exercise Name the most appropriate contract type to use in the situation described. Your choices are FP, FPIF, FPAF, FPEPA, purchase order, T&M, CR, CPF or CPPC, CPFF, CPIF, or CPAF contracts. Read each situation carefully to determine whether the information is sufficient to indicate only that some type of cost-reimbursable (CR) or fixed-price (FP) contract would apply, or whether the details of the situation suggest a more specific type of cost-reimbursable (CPF or CPPC, CPFF, CPIF) or fixed-price contract (FPIF, FPAF, FPEPA) should be used.

	Situation	Type of Contract
1	You need work to begin right away.	
2	You want to buy expertise in determining what needs to be done.	
3	You know exactly what needs to be done.	
4	You are buying a programmer's services to augment your staff for a short period.	
5	You need work done, but you don't have time to audit invoices.	
6	You need to rebuild a bridge as soon as possible after a storm.	
7	The project requires a high level of expertise to complete, and you want to have the best performance possible in the finished product.	
8	You need to hire a contractor to perform research and development.	
9	The scope of work is complete, but the economy is currently unpredictable.	
10	You are buying standard commodities.	

Answer The answers are below. Also try to think of other situations in which you would use each type of contract.

	Situation	Type of Contract
1	You need work to begin right away.	T&M
2	You want to buy expertise in determining what needs to be done.	CR
3	You know exactly what needs to be done.	FP
4	You are buying a programmer's services to augment your staff for a short period.	T&M
5	You need work done, but you don't have time to audit invoices.	FP
6	You need to rebuild a bridge as soon as possible after a storm.	FPIF
7	The project requires a high level of expertise to complete, and you want to have the best performance possible in the finished product.	CPIF or CPAF
8	You need to hire a contractor to perform research and development.	CR
9	The scope of work is complete, but the economy is currently unpredictable.	FPEPA
10	You are buying standard commodities.	Purchase order

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Risk and Contract Type The exam may ask questions that correlate risk with the different types of contracts. Figure 12.1 shows the amount of cost risk the buyer and seller have with each contract type. Use this diagram to better understand the different contract types and to help answer questions such as:

Question Who has the risk in a cost-reimbursable contract—the buyer or seller?
Answer The buyer. If the costs increase, the buyer pays the added costs.

Question Who has the cost risk in a fixed-price contract—the buyer or seller?
Answer The seller. If costs increase, the seller pays the costs and makes less profit.

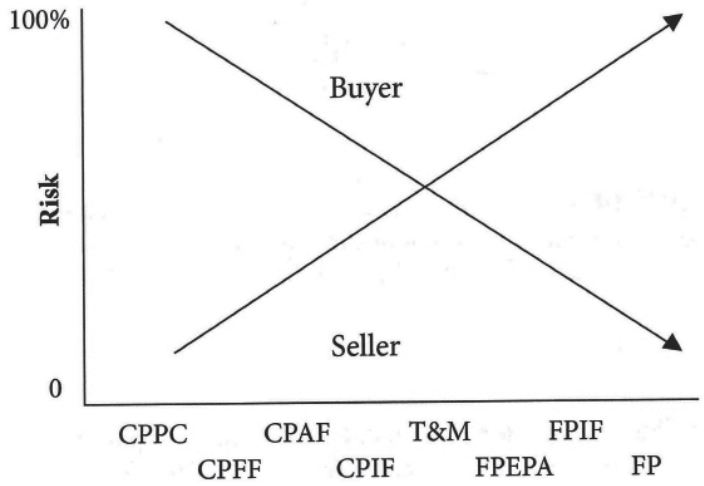

FIGURE 12.1 *Risk to buyer and seller according to contract type*

Other Terms to Know Remember, profit and cost are different. Profit is the amount of money the seller has left over after costs are paid. Be careful on the exam to read questions carefully. Also consider the perspective. Are the questions referring to the buyer's cost or the seller's cost? The following list provides definitions of terms you should understand for the exam:

- **Price** This is the amount the seller charges the buyer.
- **Profit (fee)** In a fixed-price or time and materials contract, a seller builds a profit margin into the amount they charge the buyer. In cost-plus contracts, the "plus" represents the profit, and that amount is typically negotiated by the buyer and seller.
- **Cost** This is how much an item costs the seller to create, develop, or purchase. A buyer's costs include a seller's costs and profits.
- **Target price**[7] This term is often used to compare the end result (final price) with what was expected (the target price). Target price is a measure of success. Watch for similar terms. Target cost plus target fee equals target price. (Remember, we are thinking about procurements from the buyer's point of view!)
- **Sharing ratio**[8] Incentives are usually expressed as a ratio, such as 90/10. This sharing ratio describes how the cost savings or cost overrun will be shared; the first number represents the buyer portion of the ratio and the second number represents the seller portion (buyer/seller).

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- **Ceiling price**[9] This is the highest price the buyer will pay; setting a ceiling price is a way for the buyer to encourage the seller to control costs. The ceiling price is a condition of the contract that must be agreed to by both parties before signing. Keep in mind that answers to calculations on the exam can change when a ceiling price is mentioned.
- **Point of total assumption (PTA)**[10] This only relates to fixed price incentive fee contracts, and it refers to the amount above which the seller bears all the loss of a cost overrun. Costs over the PTA are assumed to be due to mismanagement: a design statement of work should have been created to allow for fair and reasonable contract negotiations for the required work, suggesting the seller either did not estimate correctly or did not manage the work well. Sellers will sometimes monitor their actual costs against the PTA to make sure they are still receiving a profit for completing the project.

Formula: Point of Total Assumption

$$\text{PTA} = \frac{\text{Ceiling price} - \text{Target price}}{\text{Buyer's share ratio}} + \text{Target cost}$$

Incentives Calculations

Now that you understand the concepts, it is time to work through some examples. You may see up to three questions on the exam requiring you to use these types of calculations. As you do the following exercises, notice the terms "cost," "fee," and "price." These terms all have different meanings, as defined previously.

Exercise Cost Plus Incentive Fee Calculation In this cost plus incentive fee contract, the cost is estimated at $210,000, and the target fee is set at $25,000. The project is complete, and the buyer has agreed that the costs were, in fact, $200,000. Because the seller's costs came in lower than the estimated costs, the seller shares in the savings: 80 percent to the buyer and 20 percent to the seller. Calculate the final fee and final price.

Target cost	$210,000
Target fee	$25,000
Target price	$235,000
Sharing ratio	80/20
Actual cost	$200,000

Final Fee	
Final Price	

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Answer Remember that for the exam you may have to calculate both the final fee and the final price.

Final Fee	$210,000 – $200,000 = $10,000 $10,000 × 20% = $2,000 $25,000 target fee + $2,000 = $27,000 fee
Final Price	$200,000 + $25,000 + $2,000 = $227,000

Exercise Fixed Price Incentive Fee Calculation Now try the following exercise from the seller's perspective. In this fixed price incentive fee contract, the target cost is estimated at $150,000, and the target fee is $30,000. The project is over, and the buyer has agreed that the costs were, in fact, $210,000. Because the seller's costs came in higher than the target cost, the seller shares in the added cost: 60 percent to the buyer and 40 percent to the seller. Calculate the final fee, the final price, and the point of total assumption. Note the ceiling price.

Target cost	$150,000
Target fee	$30,000
Target price	$180,000
Sharing ratio	60/40
Ceiling price	$200,000
Actual cost	$210,000

Final Fee	
Final Price	
Point of Total Assumption	

Answer In this case, the actual cost is higher than the target cost, so the seller receives less fee, or profit. Instead of receiving $30,000 in fee, the seller is due only $6,000. (Note that in the answer table, the parentheses in the cell where this final fee is calculated are a common accounting convention indicating negative numbers.) The actual cost plus fee comes to $216,000, but this is higher than the ceiling price (the maximum amount the buyer will pay). The result is that the seller is paid $200,000 when the costs were $210,000. The seller made no profit, and in fact actually lost $10,000.

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The point of total assumption (the amount above which the seller bears all the loss of a cost overrun) was $183,333. The seller should have calculated the point of total assumption and used it to manage the work and costs to ensure that their costs did not exceed this amount, since the seller suffers the effects of the inability to control the project and loses money on it.

Final Fee	$150,000 – $210,000 = ($60,000) overage ($60,000) × 40% = ($24,000) $30,000 + ($24,000) = $6,000
Final Price	$210,000 + $6,000 = $216,000 However, this amount is above the ceiling price of $200,000. Therefore, the final price (what the buyer will pay) is $200,000.
Point of Total Assumption	[($200,000 – $180,000)/60%] + $150,000 ($20,000/0.6) + $150,000 $33,333 + $150,000 = $183,333

Imagine that a question on the exam describes a scenario with a fixed price incentive fee contract where actual costs of the work to date are nearing the PTA, and there's still work left to complete. What should the seller do? What would happen if the seller did nothing? The seller's project manager should take the proactive approach of planning and performing cost and schedule management activities on the contract to determine how to address the situation. This should help the project manager anticipate possible problems and find solutions before the seller loses all the profit on the work.

Exercise Fixed Price Incentive Fee Calculation Try this one. For this exercise, you are again the seller in the procurement. In this fixed price incentive fee contract, the target cost is $9,000,000, and the target fee is $850,000. The project is done, and the buyer has agreed that the costs were, in fact, $8,000,000. Because the seller's costs came in lower than the estimated costs, the seller shares in the savings: 70 percent to the buyer and 30 percent to the seller. Calculate the final fee and final price.

Target cost	$9,000,000
Target fee	$850,000
Target price	$9,850,000
Sharing ratio	70/30
Ceiling price	$12,500,000
Actual cost	$8,000,000

Final Fee	
Final Price	

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Answer In this case, the actual cost is lower than the target cost, so the seller receives more fee, or profit. Instead of receiving just $850,000 in fee, the seller receives that fee plus an additional $300,000—for a total of $1,150,000. The fee added to the cost totals $9,150,000. Because that is less than the ceiling price, the seller gets paid that amount. Therefore, the seller gains because of their ability to control the project.

Final Fee	$9,000,000 – $8,000,000 = $1,000,000 $1,000,000 × 30% = $300,000 Original fee of $850,000 + $300,000 = $1,150,000
Final Price	$8,000,000 + $1,150,000 fee = $9,150,000

Putting It All Together

After going through all these pages, you should start to feel like you understand the different types of contracts. Try the next exercise to help you put it all together.

We've heard people say they love the exercises in this book, but they always jump straight to the answers. We strongly advise against this. The exercises are designed to increase your knowledge as you do them, so don't skip ahead!

You can also use the questions in PM FASTrack® to test your knowledge of contract types.

Exercise Answer the questions in the following table for each contract type. (This is the most challenging exercise in this chapter. The questions are meant to be very difficult in order to further test your knowledge.)

	Question	Cost-Reimbursable	Time and Material	Fixed-Price
1	Generally, what is being bought? (Product or service)			
2	How might the costs to the buyer be stated in the contract?			
3	How might the profit be stated in the contract?			
4	What is the cost risk to the buyer? (High, medium, low, none)			
5	How important is a detailed procurement statement of work? (High, medium, low, none)			

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	Question	Cost-Reimbursable	Time and Material	Fixed-Price
6	What industry uses this contract type most frequently?			
7	How much negotiation is usually required to sign the contract after receipt of the seller's price? (High, medium, low, none)			
8	What level of effort and expertise will the buyer need to devote to managing the seller? (High, medium, low, none)			
9	How are costs billed to the buyer?			
10	How much auditing of the seller's costs will the buyer need to do? (High, medium, low, none)			

Answer To make sense of this exercise, review the answers in the following table.

	Question	Cost-Reimbursable	Time and Material	Fixed-Price
1	Generally, what is being bought? (Product or service)	Service (some products may be included)	Service	Product
2	How might the costs to the buyer be stated in the contract?	Costs are variable, but the fee/profit is fixed (as a set amount or a percentage)	Hourly rate or price per unit	As a set currency amount (e.g., $1 million)
3	How might the profit be stated in the contract?	Listed separately, and known to the buyer	Included in the hourly rate, and may be unknown to the buyer	Included in the price, and unknown to the buyer

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	Question	Cost-Reimbursable	Time and Material	Fixed-Price
4	What is the cost risk to the buyer? (High, medium, low, none)	High; increases in costs are reimbursed by the buyer	Medium; although the costs are not fixed, they are known per unit, and this contract type is used for small purchases for a limited time	Low; increases in costs are borne by the seller
5	How important is a detailed procurement statement of work? (High, medium, low, none)	Low; the procurement statement of work only needs to describe the performance or functional requirements, since the seller provides the expertise on how to do the work; the buyer pays all costs, so there is less need to finalize the scope	Low; this type traditionally has very little scope, and may only describe skill sets required	High; the procurement statement of work must be complete so the seller knows exactly what work needs to be done in order to come up with an accurate price to complete the work
6	What industry uses this contract type most frequently?	IT, research and development, and knowledge work; when the work has never been done before (as is often the case in these industries), the seller cannot fix a price; therefore, this is the best form to use	When hiring people for an hourly rate, you are usually hiring services, such as legal, plumbing, or programming	Complete scope of work is most common in the construction industry
7	How much negotiation is usually required to sign the contract after receipt of the seller's price? (High, medium, low, none)	High; all estimated costs are looked at to calculate the fee to be paid	Low or none	None
8	What level of effort and expertise will the buyer need to devote to managing the seller? (High, medium, low, none)	High	Medium	Low

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	Question	Cost-Reimbursable	Time and Material	Fixed-Price
9	How are costs billed to the buyer?	Actual costs as incurred; profit at project completion, or apportioned as allowed in the contract	Hourly or per unit rate (which includes all costs and profit)	Fixed price (which includes profit) according to a payment schedule as work is completed and as allowed in the contract
10	How much auditing of the seller's costs will the buyer need to do? (High, medium, low, none)	High; all costs must be audited, and there will be a large number of invoices	None; there may be an audit of work hours completed against those billed, but that will take little effort	Low; since the overall contract costs are fixed, auditing usually focuses on making sure work is completed, not looking at detailed costs and receipts

Procurement Statement of Work (SOW)[11]

PAGE 477 The project manager facilitates the creation of a scope of work to be done on each procurement. This is done by breaking down the project scope baseline into the work the project team will do and the work that will be purchased from a seller(s). The work to be done on each procurement is described in a procurement statement of work.

Each statement of work must be as clear, complete, and concise as possible, and it must describe all the work and activities the seller is required to complete. This includes all meetings, reports, and communications. It must also detail the acceptance criteria and the process of gaining acceptance. The cost of adding activities later is typically more than the cost of adding them at the beginning of the procurement. Does this make you think about the amount of work required to create a complete procurement statement of work?

What does the word "complete" mean? It depends on what you are buying. If you are buying expertise (such as software design or legal services), your procurement statement of work will include a detailed description of functional and/or performance requirements, a completion timeline, and evaluation criteria, in addition to required meetings, reports, and communications.

If you are buying the construction of a building, your requirements will be extremely specific, outlining things such as the materials to be used, the process that must be followed, and even a work schedule. If you are hiring staff that you will direct (for example, a programmer to be added to the team), your procurement statement of work will likely contain more details of what you want the person to create or achieve. Ask yourself, "If I were the seller, how comfortable would I be signing a legally binding contract to complete this work for a certain price?" Put yourself in the seller's shoes, and make sure the scope of work is as descriptive and as complete as possible. The level of detail required will influence the selection of the contract type and the creation of the bid documents.

The procurement statement of work may be revised during contract negotiation, but it should be finalized by the time the contract is signed. A procurement statement of work can include drawings, specifications, and technical and descriptive wording. No matter what it contains, however, the procurement statement of work becomes part of the contract. Remember that a contract is a document used to manage a procurement activity. It does not just sit in a drawer. Therefore, both parties to the contract should always be asking, "What does the contract say?" If the procurement statement of work is not complete, the seller may

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frequently need to request clarification or ask for change orders, which can get expensive, and the project manager and/or the procurement manager may find themselves constantly dealing with questions about whether a specific piece of work is included in the original cost or time estimates submitted by the seller.

Think about change orders in the context of the procurement strategy and the project plan. In general, contract change orders cost money or cause delay. Bad procurement SOWs can result in overspending and delayed or failed projects. Simply put, the procurement SOW should describe what you want, when you want it and how good it should be.

Although they are not specified in the *PMBOK® Guide*, there are several types of procurement statements of work with which you should be familiar. Your choice will depend on the nature of the work, the industry, and the amount of detail that can be provided about the work. The following are types of procurement statements of work:

- **Performance** This type conveys what the final product should accomplish, rather than how it should be built or what its design characteristics should be. For example, "I want a car that will go from zero to 120 kilometers per hour in 4.2 seconds."
- **Functional** This type conveys the end purpose or result, rather than the specific procedures or approach. Functional procurement statements of work may include a statement of the minimum essential characteristics of the product. For example, "I want a car with 10 cup holders."
- **Design** This type conveys precisely what work is to be done. It includes the materials to be used and an explanation of how the work should be completed. Design procurement statements of work are most commonly used for construction and equipment purchases. For example, "Build a garage exactly as shown in these drawings."
- **Terms of reference (TOR)** If the procurement is for services rather than products, the procurement statement of work may be referred to as terms of reference. It includes the work the seller will perform, standards the seller is expected to achieve, and the data and services that will be provided to the buyer.

Source Selection Criteria[12]

PAGE 478 Source selection analysis results in finalized source selection criteria. Often, the criteria are assigned numerical percentage values (weighted) to enable evaluation of proposals based on each criterion. The criteria are included in the bid documents to give the seller an understanding of the buyer's needs and to help the seller decide whether to bid or make a proposal on the work. When the buyer receives the sellers' responses during the Conduct Procurements process, source selection criteria such as cost, quality, and expertise become the basis for the evaluation of the bids or proposals.

Independent Cost Estimates

PAGE 479 The buyer may prepare an internal estimate, or use the input of experts, to come up with a benchmark against which to validate the bids provided by outside sellers during Conduct Procurements.

Bid Documents

PAGE 477 After the contract type is selected and the procurement statement of work has been created, the buyer can put together the bid document, which describes the buyer's needs to sellers. The following are some types of bid documents.

- **Request for proposal (RFP)** An RFP (sometimes called a request for tender) requests a detailed proposal that includes information on price, how the work will be accomplished, who will do it (along with résumés, in some cases), and company experience.

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- **Invitation for bid (IFB)** An IFB, sometimes called a request for bid (RFB), usually requests a total price to do all the work. Think of an IFB as a form of RFP where the work described in the procurement statement of work is detailed enough for bidders to determine a total price.
- **Request for quotation (RFQ)** RFQs request a price quote per item, hour, meter, or other unit of measure.
- **Request for information (RFI)** An RFI might be used before bid documents are created. Responses to the RFI help the buyer identify which companies are qualified to handle the procurement. Buyers can also use RFIs to collect information on what work is possible, for later inclusion in RFPs or IFBs. Remember that the purpose of an RFI is to get information, whereas the purpose of an RFP or RFQ is to buy something.

To provide the seller with as clear a picture as possible of what needs to be done to win the work and what the work involves, bid documents may include the following information for sellers:

- Background information about why the buyer wants the work done
- Procedures for trying to win the work (such as whether there will be a bidder conference, when the responses are due, and how the winner will be selected)
- Guidelines for preparing the response (such as maximum length and topics to address in the response)
- The exact format the response should be in (such as which forms must be filled out and whether email submissions are allowed)
- Source selection criteria—the criteria the buyer will use to evaluate responses from the sellers (such as number of years in business, quality of the response, or price)
- Pricing forms (forms to adequately describe the price to the buyer)
- Procurement statement of work
- Proposed terms and conditions of the contract (legal and business)

Note that the proposed contract is included in the procurement documents. Do you know why? The terms and conditions of the contract are also work that needs to be done, and there are costs associated with that work, including such things as warranties, ownership, indemnification, and insurance requirements. The seller must be aware of all the work that needs to be completed to adequately understand and price the project.

Well-designed bid documents can have the following effects on a project:

- Easier comparison of sellers' responses
- More complete responses
- More accurate pricing
- Decreased number of changes to the project

Sellers may make suggestions for changes to the procurement documents, including the procurement statement of work and the project management requirements included in the documents, before the contract is signed. When approved, these changes are issued by the buyer as addenda to the bid documents and will ultimately become part of the final contract.

The following sections discuss some additional terms a project manager should know when working with procurements.

Nondisclosure Agreement

For many procurements, there is a great need for confidentiality. Perhaps the buyer does not want the general public or their competitors to know they are pursuing the procurement. Perhaps the seller will need to send the buyer information they want to keep confidential.

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In these and many other cases, there may be a confidentiality or nondisclosure agreement signed before procurement information is released or at any other time when it may be appropriate to protect those interests. Such an agreement between the buyer and prospective sellers identifies the information or documents they will control and hold confidential; it also details who in the organization will have access to the confidential information. With a nondisclosure agreement in place, the buyer can talk more openly about their needs without fear that the public or one of the buyer's competitors will gain access to the information. Like any agreement, a nondisclosure agreement has consequences if violated.

Standard Contract The contract terms and conditions are most commonly created by the buyer, who may have even put their terms and conditions into a standard format that is used over and over on similar procurements. Standard contracts are usually drafted—or at least reviewed—by lawyers and generally do not require additional review if used for the purpose for which they were intended. You should understand standard contracts, but also realize the project manager's role in special provisions (described next).

Special Provisions (Special Conditions) The project manager must be able to not only read and understand standard terms and conditions but also to determine when additions, changes, or deletions from the standard provisions are required. By facilitating necessary adjustments, the project manager can make sure the resulting contract addresses the particular needs of the project. The project manager (remember when taking the exam that you are the buyer's project manager, unless a question states otherwise) meets with the procurement manager (if there is one) to discuss the needs of the project and to determine the final contract terms and conditions.

Additions, changes, or deletions are sometimes called special provisions and can be a result of any of the following:

- Risk analysis
- The requirements of the project
- The type of project
- Administrative, legal, or business requirements

Terms and Conditions Let's start out with a story. A project manager needed his team members to be trained to use some equipment. He contacted a seller to do the work and then proceeded to have his procurement department send the seller a contract. Meanwhile, he arranged for team members to fly in from around the world for the training. In the contract, the project manager's procurement department sent, there were terms and conditions that said the project manager's company would have the rights to create derivative works and make copies of any handouts from class. Those handouts were proprietary and already copyrighted. The seller could not and would not sign such a contract.

The class had to be cancelled at the last minute, after many people were already on planes to attend the training. Whose fault was this? It was the project manager's fault. He should have made sure the procurement department understood what they were buying and also should have taken a look at the contract before it was sent to make sure any inappropriate language was removed. Creating a contract requires the involvement of both the project manager and the procurement manager. Do you work with a procurement manager to review contracts on your projects?

Another reason it is important to understand contract language is to be able to enforce it. Remember, if it is in the contract, it must be done unless both sides agree and a change is issued!

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Here's another story. One day, the director of a company called the project manager to ask where the seller's reports were. The project manager did not know what reports the director was asking about; she had not confirmed they were received from the seller. It turned out that those reports, which seemed minor to the project manager when she finally read the contract, had major legal significance to the company. Not receiving them cost the buyer's company an extra $50,000. The lesson? Know what is in your contracts and why.

In another situation, a seller didn't submit testing information required in the contract to the buyer, and the buyer's project manager did not notice it was not received. After four weeks, the company head asked for the testing information. The project manager then asked the seller to send the information. The seller argued, "You did not receive the testing reports for four weeks, and you did not say anything. You have therefore waived your rights to ever get them." They refused to give the reports without a change to the contract and additional payment. This issue went to a court of law to resolve. The court found in favor of the seller. The lesson? Read the contract, and enforce all that is there.

Terms and conditions (either standard or special) in a contract differ depending on what you are buying. If you are buying work that includes equipment, you will need terms that describe when ownership of the equipment will be transferred to the buyer as well as terms that require insurance for damages in transit. If you are buying professional services, you will need terms requiring professional liability insurance or errors and omissions insurance. The required terms are usually determined by the procurement manager. However, the project manager should be generally familiar with most common terms.

The following are some general categories of the terms and conditions that can make up standard or special provisions. You do not need to know specific examples. Instead, you should be generally familiar with what all these concepts mean and what impact they would have on you as the project manager. The exam will often simply use these terms in sentences such as, "There was a force majeure," and you'll need to understand what that means. Conversely, the exam could state, "There was a huge flood that caused the seller to not be able to perform," and you will have to know that this is a force majeure. You need to understand the situation and be able to determine what the appropriate action is.

- **Acceptance** How will you specifically know if the work is acceptable?
- **Agent** Who is an authorized representative of each party?
- **Arbitration** This method to resolve disputes uses private third parties to render a decision on the dispute. Arbitration is paid for by the parties and is used because it is usually faster and cheaper than the courts.
- **Assignment** This refers to the circumstances under which one party can assign its rights or obligations under the contract to another.
- **Authority** Who has the power to do what?
- **Bonds** These are the payment or performance bonds, if any, that must be purchased. For example, a payment bond would protect the buyer from claims of nonpayment by the seller.
- **Breach/default** This occurs when any obligation of the contract is not met. Watch out—a breach on the seller's part cannot be fixed by a breach on the buyer's part. For example, failure to complete an item in the procurement statement of work (seller's breach) cannot be handled by the buyer stopping all payments (buyer's breach).

  A breach is an extremely serious event. The exam may present situations in which seemingly little things in the contract are not done. The response to a breach must always be to issue a letter formally notifying the other party of the breach. The project manager must understand the legal implications of their actions. If they do not watch out for and send an official notice of breach, the project manager's company could lose its right to claim breach later.
- **Changes** How will changes be made? What forms will be used? What are the timeframes for notice and turnaround?

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- **Confidentiality/nondisclosure** What information must not be made known or given to third parties?
- **Dispute resolution** How will any disputes regarding the contract be settled? Some options for dispute resolution are to use the courts or an arbitrator.
- **Force majeure** This refers to a situation that could be considered an "act of nature," such as a fire or freak electrical storm, and it is an allowable excuse for either party not meeting contract requirements. If a force majeure occurs, it is considered to be neither party's fault. It is usually resolved by the seller receiving an extension of time on the project. Who pays for the cost of the items destroyed in a fire or other force majeure? Usually the risk of loss is borne by the seller and is hopefully covered by insurance. (See also "Risk of loss" below.)
- **Incentives** These are benefits the seller may receive for achieving the buyer's objectives of schedule, cost, quality, risk, and performance.
- **Indemnification (liability)** Who is liable for personal injury, damage, or accidents?
- **Independent contractor** This term means the seller is not an employee of the buyer.
- **Inspection** Does anyone have a right to inspect the work during execution of the project? Under what circumstances?
- **Intellectual property** Who owns the intellectual property (for example: patents, trademarks, copyrights, processes, source code, or books) used in connection with or developed as part of the contract? This may include warranties of the right to use certain intellectual property in performance of the contract.
- **Invoicing** When will invoices be sent? What supporting documents are required? To whom are they sent?
- **Liquidated damages** These are estimated damages for specific defaults, described in advance.
- **Management requirements** Examples of management requirements include attendance at meetings and approval of staff assigned to the project.
- **Material breach** This breach is so large that it may not be possible to complete the work under the contract.
- **Notice** To whom should certain correspondence be sent?
- **Ownership** Who will own the tangible items (such as materials, buildings, or equipment) used in connection with or developed as part of the contract?
- **Payments** When will payments be made? What are the late payment fees? What are reasons for nonpayment? Watch out for questions regarding payment management. For example, as a response to inaccurate invoices, the buyer cannot stop all payments; this would be a breach. They can, however, stop payments on disputed amounts.
- **Procurement statement of work** If it is not a separate document, this will be included as part of the contract.
- **Reporting** What reports are required? At what frequency? To and from whom?
- **Retainage** This is an amount of money, usually 5 percent or 10 percent, withheld from each payment. This money is paid when the final work is complete. It helps ensure completion.
- **Risk of loss** This allocates the risk between the parties to a contract in the event goods or services are lost or destroyed during the performance of a contract.
- **Site access** This describes any requirements for access to the site where the work will be performed.
- **Termination** Termination is stopping the work before it is completed.
- **Time is of the essence** Delivery dates are strictly binding. The seller is on notice that time is important and that any delay is a material breach.

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- **Waivers** These are statements saying that rights under the contract may not be waived or modified other than by express agreement of the parties. A project manager must realize that they can intentionally or unintentionally give up a right in the contract through conduct, inadvertent failure to enforce, or lack of oversight. Therefore, a project manager must understand and enforce all aspects of the contract, even if a procurement manager is involved in administering the contract.
- **Warranties** These are promises of quality for the goods or services delivered under the contract, usually restricted to a certain time period.
- **Work for hire** The work provided under the contract will be owned by the buyer.

Letter of Intent

Negotiating a contract and getting final signatures can take time. In some instances, the seller may need to start hiring people or ordering equipment and materials before the contract is signed in order to meet the contract requirements. If the contract is not signed in time, the seller may ask the buyer to provide a letter of intent. Correctly defined, a letter of intent is not a contract, but simply a letter stating that the buyer intends to hire the seller. It is intended to give the seller confidence that the contract will be signed soon and to make them comfortable with taking the risk of ordering the equipment or hiring the staff that will eventually be needed.

Privity

Sometimes the exam includes terms that only procurement experts use. This is one of them. Privity simply means a contractual relationship. The following explains privity and shows how questions on this topic may be asked.

Question Company A hires company B to do some work. Company B subcontracts to company C. The project manager for company A is at the job site and tells company C to stop work. Generally, does company C have to listen?

Answer No. Companies C and A have no contractual relationship. Company A needs to talk to company B, who needs to talk to company C.

You may not be familiar with the term, but you might be familiar with the situation just described. Can you see how this would be an important issue for a project manager to understand? Any directive that the project manager from company A may give to company C can cause huge liability for company A. For example, company A may have to pay delay claims to company B, plus the costs of delay to company C if company C stopped work at company A's direction.

Noncompetitive Forms of Procurement

In many cases, procurement is competitive. There may be multiple sellers who can do the work and who are invited to submit a response to the bid documents. As stated earlier, public organizations are generally required by law to follow certain practices regarding competitive procurements and to make a selection from the prospective sellers in a certain way. For private companies, competitive bidding is not required by law, although they might have internal policies that must be followed regarding procurement practices. Often, a private company may bypass competitive procurement by using master service agreements or preferred seller lists, in which case they could simply issue a purchase order to obtain goods or services from a previously approved or preferred seller.

If there is only one seller who can do the work or an unregulated entity wants to work with a company they have worked with before, they may avoid the competitive procurement process. Regardless of whether the procurement is competitive, however, they must still have a procurement statement of work.

When would you award work to a company without competition?

- The project is under extreme schedule pressure.
- A seller has unique qualifications.

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- There is only one seller who can provide the goods or service.
- A seller holds a patent for the item you need.
- Other mechanisms exist to ensure the seller's prices are reasonable.
- The procurement is for a small amount of money.

If you do not use a competitive process, you enter into one of the following types of noncompetitive procurements:

- **Single source** In this type of procurement, you contract directly with your preferred seller without going through the full procurement process. You may have worked with this company before, and, for various reasons, you do not want to look for another seller. In some cases, there may be a master service agreement in place between an organization and a particular seller: this is an established, ongoing contract between the organization and a seller for a particular type of service the organization may require regularly.
- **Sole source** In this type of procurement, there is only one seller. This might be a company that owns a particular patent.

If you are using one of these noncompetitive forms of procurement, you may save time compared with competitive forms by not having to go through the procurement process before bids or proposals are received, but you will still have to spend time in negotiations after the proposal or bid is received to finalize the contract.

TRICKS OF THE TRADE Tricky situational questions on the exam may address procurement concepts you have not dealt with before, such as describing the work that would need to be done to negotiate a contract when there is no competition. The following exercise will help.

Exercise Test yourself! What types of issues might occur in a noncompetitive procurement that would not be as significant in a competitive environment?

Single Source—There Is a Preferred Seller

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Sole Source—There Is Only One Seller

Answer

Single Source—There Is a Preferred Seller

- **Scope** More work will be needed to document items received without cost in the past to make sure you get them now. Only what is in the contract will be received.
- **Scope** There could be a tendency for the buyer's organization to say, "The seller knows us, and we know them; we do not have to spend so much time determining our requirements and completing a procurement statement of work. They know what we want."
- **Quality** The seller may never be asked to prove they have the experience, cash flow, and manpower to complete the new work. Also, the quality of work may not consistently meet stated requirements because the seller knows they are not competing and may not complete work at the quality levels expected.
- **Cost** It will be necessary to spend time comparing the previous cost to the new cost to check if it is reasonable.
- **Schedule** Now that the seller knows they have you as a longer-term customer, they may not be as responsive to your schedule requirements.
- **Customer satisfaction** Now that the seller knows they have you as a longer-term customer, they may not be as responsive to your concerns.
- **Risk** The risk can be weighted more toward the buyer unless the previous issues are investigated and addressed.

Sole Source—There Is Only One Seller

- **Risk** What if the seller owns a patent and goes out of business? What if the seller takes on too much business and can't complete all the work on time?
- **Risk** If the seller owns a patent and goes bankrupt, who owns the patent? How will you get what you need from the seller?
- **Quality** You may have to take what you get rather than being able to request a certain quality level.

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- **Cost** Multiyear agreements may be required for the purchase of items to prevent a price increase in the future.
- **Schedule** The seller has little incentive to agree to a schedule.
- **Customer satisfaction** The seller has little incentive to be concerned with the buyer's needs and desires.
- **Scope** You may have to change the work specified in the project to "take what you can get," rather than "ask for what you want."
- **Risk** The overall risk may be weighted more toward the buyer unless the previous issues are investigated and resolved.

Make sure you read questions on the exam carefully. They might ask what to watch out for or what needs to be negotiated in noncompetitive procurements. They may simply ask about the procurement process. Do you understand how your efforts during the procurement process are different when there are not multiple companies to go to for the goods or services?

Change Requests

Keep in mind that many procurements may not begin for months or years after initial project planning is completed. Therefore, the procurement management plan is likely to be iterated, and possibly changed through integrated change control, as each procurement is needed. This is often accomplished through change requests.

The results of procurement management planning may impact existing components of the project management plan. For example, it may be determined in procurement planning that the current budget is not adequate to cover the cost of a procurement, requiring a change request to the cost management plan and baseline. As another example, clarifying needs for physical resources (materials or equipment) may require changes to elements of the project management plan, such as the resource management plan and schedule and cost baselines.

Conduct Procurements PAGE 482

Process Conduct Procurements
Process Group Executing
Knowledge Area Procurement Management

This process involves getting the bid documents, including the procurement statement of work and other documents created in the Plan Procurement Management process to prospective sellers, answering the sellers' questions, and receiving and evaluating sellers' responses. You will select a seller using the source selection criteria specified in the procurement management plan, and then negotiate a contract.

The project manager and team will utilize many important inputs in this process. For instance, the procurement management plan gives direction on the work that will be done during this process. Other management plans provide information on how project work will be done, including the work that will be performed by outside sellers. Also note that the cost baseline provides direction regarding the approved budget for costs related to procurements. The schedule indicates dates within which procurements must be completed.

Because the process to finalize procurements is ongoing throughout the project, the project manager and team may be able to make use of lessons learned from prior procurements on the current project. Lessons learned documentation may provide insight into the organization's previous experiences with potential sellers. This information might enable the team to select a seller based on the seller's past performance, eliminating the need for additional evaluation, and making the process more efficient and effective.

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Of course, the procurement documentation created in planning is also a key input. But before you can send bid documents to prospective sellers, you need to know who those sellers are. A buyer may use techniques such as advertising to find possible sellers or may send the bid documents to a select list of sellers preapproved by the organization (an organizational process asset). The organization may already have an existing agreement with a particular seller. In this case, they could work with that seller to negotiate terms to add new work to the contract.

Advertising PAGE 487 To attract sellers, an advertisement may be placed in newspapers, magazines, online, or in other types of media. Not all advertising costs money: the need for sellers could be announced on the company's website, through media releases or professional associations, or through free online advertising. NOTE: The US government and many state and local agencies are required to advertise most of their procurements.

Bidder Conferences[13] PAGE 487 Once the prospective sellers have been identified and have received the bid documents, the buyer controls who can talk to the sellers and what can be discussed. This control allows the buyer to maintain the integrity of the procurement process and to make sure all sellers are bidding or proposing on the same work.

To make sure all the sellers' questions are answered, the buyer may invite the sellers to attend a meeting —called a bidder conference, contractor conference, vendor conference or pre-bid conference—in which they can tour the buyer's facilities (if relevant to the project) or attend an online forum and ask questions about the procurement. The questions asked during the bidder conference, along with the buyer's responses, are documented and sent to all prospective bidders to make sure they all have the same information. The questions and answers asked during the bidder conference are also added to the bid documents as addenda.

Getting answers to questions can be important because many bid documents will include a provision saying that by submitting a bid or proposal, the seller warrants that the bid covers all the work. The bidder conference is also an opportunity for the buyer to discover anything missing in the bid documents.

A bidder conference can be key to making sure the pricing in the seller's response matches the work that needs to be done and is, therefore, the lowest price. Bidder conferences benefit both the buyer and seller. It is a good practice for the project manager to attend the bidder conference. The exam often asks what things the project manager must watch out for in a bidder conference. The answers include:

- Collusion
- Sellers not asking questions in front of the competition
- Making sure all questions and answers are put in writing and issued to all potential sellers by the buyer as addenda to the bid documents (ensuring that all sellers are responding to the same procurement statement of work)

Seller Proposal (or Price Quote or Bid) PAGE 486 This is a seller's response to the bid documents. A proposal is usually the response to a request for proposal (RFP), a price quote is usually the response to a request for quote (RFQ), and a bid is usually the response to an invitation for bid (IFB). The proposal (or price quote or bid) represents an official offer from the seller. RFPs and RFQs describe how

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the buyer will meet the seller's request. A potential seller's response to an RFI provides information to help the buyer better define their procurement need. Responses to a seller's request for information may trigger the creation of an RFP or RFQ.

Keep in mind that sellers may have many RFPs, RFQs, and IFBs sent to them. They need time to review them and determine which they are interested in responding to. To ensure the best sellers will be interested, the bid documents should be as complete and straightforward as possible.

When a seller decides to respond, they need to form a team, evaluate the buyer's needs, attend the bidder conference, and create a response. This can sometimes take a month or more. The buyer's project manager should allow for this time—and the time required for the rest of the procurement process—in the project schedule.

Proposal Evaluation PAGE 487 After receiving the proposals, the buyer (represented by an evaluation committee) may first use a screening system to eliminate sellers who do not meet the minimum requirements of the source selection criteria. Then, the buyers uses the source selection criteria identified in the Plan Procurement Management process to assess the ability and willingness to provide the requested products or services. This data analysis technique provides a basis to quantitatively evaluate proposals and minimize the influence of personal prejudices.

To select a seller:

- The buyer may simply select a seller and ask them to sign a standard contract.
- The buyer may ask a seller to make a presentation, and then, if all goes well, move on to negotiations.
- The buyer may narrow down ("short-list") the list of sellers to a few.
- The buyer may ask the short-listed sellers to make presentations, and then ask the selected seller(s) to go on to negotiations.
- The buyer may negotiate with more than one seller.
- The buyer may use some combination of presentations and negotiations.

The choice of methods depends on the importance of the procurement, the number of interested sellers, and the type of work to be performed. The sellers' proposals are usually reviewed and compared by the evaluation committee using one or a combination of the formal, structured processes discussed next.

Weighting System[14] When the responses from sellers have been received, the buyer's evaluation committee will analyze the responses and select a seller to award the contract to or to negotiate with. If the buyer is a public entity and the response is to an invitation to bid, the answer is simple. The work goes to the lowest responsive, responsible bidder. In the case of a proposal, the selection decision is more complicated. The buyer will apply the selection criteria chosen in planning. But which is more important? Price? Competence? Availability? Selection criteria are assigned values based on their relative importance to the procurement. For example, if price is more important, it will be given a higher rating and weight. The buyer's evaluation committee then analyzes seller responses using the weighted source selection criteria.

There are no calculations on the exam regarding weighting systems, but the following example should help you better understand the concept.

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Seller A	A	B	C
Criteria	Weight	Rating for this category (1 to 100)	Category score (column A times B)
Number of years in business	5 percent	50	2.5
Understanding of need	25 percent	80	20
Price or life cycle cost (see definition in the Cost Management chapter)	10 percent	90	9
Technical ability	25 percent	40	10
Ability to complete the work on time	20 percent	30	6
Project management ability	15 percent	30	4.5
Total score for this seller			52

Past Performance History The buyer may consider both their history with the prospective sellers and feedback from other organizations who have done business with the sellers when determining which seller to award the procurement to.

Independent Cost Estimates The buyer should compare the seller's proposed cost with an estimate created in-house or with outside assistance during procurement planning efforts. This allows the buyer to discover significant differences between what the buyer and seller intend in the procurement statement of work. The buyer must have their own estimates to check reasonableness and cannot rely solely on the seller's cost estimates. Responses that are significantly different from what is expected may indicate an issue with the sellers' understanding of the procurement statement of work.

Presentations In many cases, some of the sellers will be asked to make presentations of their proposals. This is often a formal meeting of the buyer's and seller's teams. It provides the seller with an opportunity to present their proposal, team, and approach to completing the work. The buyer has an opportunity to see the team they may hire and to ask questions to assess the team's competency. Presentations are used most often for procurements that have cost-reimbursable contracts, but they can be used whenever there is a lot to assess.

Negotiations PAGE 488 Don't get worried about this topic. You do not have to be an expert negotiator to pass the exam. But, as you have seen in other chapters of this book, the ability to negotiate is an important interpersonal skill for a project manager. The exam assumes the project manager is involved in contract negotiations, although the procurement manager generally leads the negotiations.

Negotiations are not usually needed in a fixed-price contract because the scope is complete and the lowest bidder is selected based on price. If negotiations are needed, they cover only parts of the proposed contract.

If a cost-reimbursable or time and material contract is used, there will likely be negotiations to finalize the contract price and other issues. After the contract is signed, however, there will be negotiations in all contract types whenever there are proposed changes to any part of the contract.

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The buyer's and seller's project managers must be involved in negotiations, because they are responsible for facilitating project management and resolution of technical issues on the project. The project managers must be involved in negotiating any issues that affect the key objectives of the project or how the project will be managed. Without the project managers' involvement in negotiations, it is common for a contract to be signed that the project managers later discover cannot be completed.

The exam typically has only one or two questions about contract negotiations, and one of these questions usually deals with the reasons the project manager must be involved.

Objectives of Negotiations It is important for everyone involved in negotiations to understand that the objectives of the negotiations are to:

- Obtain a fair and reasonable price.
- Develop a good relationship between the buyer and the seller.

The second item surprises most people, because they think of negotiations as win-lose. In a win-win situation, the buyer gets the work completed and the seller makes a reasonable profit. What is wrong with that? If negotiations turn from a win-win situation (preferable) to a win-lose situation, the seller will be less concerned with completing the work than with recovering what was lost in the negotiations. If negotiations are win-lose (in favor of the buyer), the buyer's project manager will have to spend time making sure the seller does not add extra costs, propose unnecessary work, or initiate other activities through claims or changes to "win" back what the seller lost during the negotiations. Many projects go bad because of the way negotiations were handled, not because of project problems themselves.

Negotiation Tactics This topic is often represented within the situational questions on the exam, though it is not covered in the *PMBOK® Guide*. You should be aware that buyers and sellers may use negotiation tactics such as delaying or withdrawal to get what they want. As a project manager, you should have the skills to overcome these tactics.

Main Items to Negotiate The main items to address while negotiating a contract can be vastly different, depending on what is being purchased. To achieve a signed contract, the following are usually negotiated in order (see if the order makes sense to you):

- Scope
- Schedule
- Price

Other items to be negotiated include the following:

- Risk
- Responsibilities
- Authority
- Applicable law: if you are working with a seller from a different state, country, or region, you need to agree upon whose law will apply to the contract
- Project management process to be used
- Payment schedule
- Quality

The clearer the scope definition, the easier it will be for the buyer and seller to come to a realistic agreement on the other items.

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Many people new to procurement management do not realize that price may not be the primary selection criteria nor the major concern while negotiating. Often, price is not a factor at all. Schedule may be more important than budget, and a buyer might sacrifice cost to gain speed. Perhaps the procurement is to solve a problem rather than to complete specific work activities. In that case, the negotiations might involve detailed discussions of the feasibility of the proposed solution.

When negotiations are complete, the procurement contract is awarded to the selected seller. Note that the *PMBOK® Guide* refers to this output using the broader term "agreement," but we'll continue to use the more specific term, "contract," as the most appropriate term for the document describing the legal relationship entered into by the buyer and seller.

What Is a Contract?

When you think of the word "contract," what comes to mind? If you are like many others, you think of all the legal words, such as indemnification, intellectual property, and other legal fine print. People often think of only the preprinted or standard contracts (boilerplate contracts) supplied to them from the contracting or legal departments. They are only partially correct.

The word "contract" actually refers to the entire agreement between both parties. Therefore, it includes boilerplate language (with the terms and conditions previously described), but it also includes business terms regarding payments, reporting requirements, marketing literature, the proposal, and the procurement statement of work—all the requirements of the project.

What is the purpose of a contract?

- To define roles and responsibilities
- To make things legally binding
- To mitigate or allocate risk

Many project managers and business professionals think the only relevant part of a contract is the procurement statement of work because they are most familiar with that aspect of the contract. However, the procurement statement of work does not include all the requirements. In fact, some of the boilerplate language can be more important. For example, think of a project to develop new software. Who owns the resulting program? Who owns the resulting program if it contains modules or pieces of programs previously used and planned for future reuse? How does the buyer protect their rights and ensure all source code is delivered? The ownership clause in a contract for such services might be more important than the procurement statement of work itself.

A contract is a legally binding document. Therefore, all terms and conditions in the contract must be met. A change process is negotiated and documented as part of the contract, so neither the buyer nor the seller can choose not to conform—or not to do something required in the contract. Changes to the contract must be made formally in writing, and submitted to integrated change control.

What Do You Need to Have a Legal Contract?

- An offer
- Acceptance
- Consideration (a transfer of something of value, but not necessarily money)
- Legal capacity (separate legal parties that are all legally competent)
- Legal purpose (you cannot have a legal, enforceable contract for the sale of illegal goods or services)

A contract, offer, or acceptance may be verbal or written, though written is preferred.

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Imagine that you need plumbing work done on your home. You contact a plumber who sends you a price with a notice that says, "If you want me to do the work on your home, send me a copy of the design drawings." Three weeks later, that plumber shows up at your home to start work. You are surprised, as you signed a contract with another plumber. The plumber says you also have a contract with him because you sent the drawings. Is the plumber right? Yes; acceptance can be an action, or it can be verbal. You have a difficult situation on your hands, and you will likely have to pay this plumber something. The trick is to avoid these situations by understanding contracts.

The key outputs of the Conduct Procurements process are discussed in the following sections.

Selected Sellers PAGE 488 After all the work of evaluating responses and negotiating with one or more prospective sellers is complete, a seller is chosen for each procurement. This means that the buyer and seller have agreed and signed off on all terms and conditions of the contract, and they will move forward to create the product or service during the Control Procurements process.

Change Requests PAGE 489 Sometimes during project executing, problems that arise related to the procurement process (for example, a seller who isn't performing) or to other areas of the project (such as risk, quality, schedule, or scope management) require reevaluation of the procurement management plan and make-or-buy decisions. So, it may be necessary to revisit the work previously done in Plan Procurement Management, which can lead to a decision to contract for resources or goods and make other changes to the project management plan or other aspects of the project. Such changes need to be submitted through integrated change control, where they are evaluated against the entire project, and approved, rejected, or deferred.

It is important enough to state again that contracts may be finalized after other project plans are completed and approved. This could trigger the need for changes to any part of the overall project, potentially including the schedule or cost baselines (to address availability or cost of procured resources), or other components of the project management plan or project documents.

Project Management Plan and Project Documents Updates PAGE 490 The finalized agreement may also necessitate changes to planned approaches to quality or communications management, as agreed upon in the contract between the buyer and seller.

Resource calendars and the requirements traceability matrix may be updated to reflect the responsibilities of new sellers for specific project requirements. The risk register may need to be updated with information regarding risks associated with particular sellers. The preapproved seller list may also be updated based on work done in Conduct Procurements.

Control Procurements PAGE 492

Process Control Procurements
Process Group Monitoring & Controlling
Knowledge Area Procurement Management

The Control Procurements process involves managing the legal relationship between the buyer and seller, and ensuring that both parties perform as required by the contract and that each contract is closed when completed or terminated. Throughout this process, the seller is focused on completing the work while the buyer is focused on measuring the performance of the seller and comparing actual performance to the contract, other procurement documents, and management plans. The exam tends to ask situational questions focusing on what happens after the contract is signed, so the Control Procurements process is an important area on the exam.

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You should understand the following about the Control Procurements process (these points are described in more detail later in this chapter).

- What the project manager should be doing at any point in time
- What problems and issues that might affect the management of the project to watch out for under each contract type
- That all work and legal requirements in the contract must be accomplished, however small and seemingly unimportant
- That the project manager must help uphold all parts of the contract, not just the procurement statement of work

Inputs to Control Procurements

PAGE 495 The procurement management plan includes the actions the project manager and team will take to oversee the procurements and ensure they are completed in accordance with the contract. The project manager may also review lessons learned to avoid the recurrence of issues experienced in the past. Also note that approved change requests from integrated change control are implemented in this process.

The project manager will use the milestone list and schedule, scope, and cost baselines to confirm that the project is progressing as planned. Requirements documentation describes technical and other requirements the procurement is expected to meet. Quality reports indicate whether the work of the procurement is within the established quality metrics. Work performance data from the Direct and Manage Project Work process gives the project manager information on costs and the status of project activities, and is used to evaluate seller performance.

Remember that monitoring and controlling is ongoing throughout the project. The project manager is continually measuring and assessing project progress, as compared to the contract and procurement documentation and management plans. The tools and techniques described later in this section include many ways in which this is accomplished. When variances are identified, they are analyzed and may need to be managed using the integrated change control system. Approved changes will be integrated into the management plans or the contract. Contract changes are handled using the organization's contract change control system,[15] which is an enterprise environmental factor. This system includes change procedures, forms, dispute resolution processes, and tracking systems, and is described in the contract. These procedures must be followed, and all changes should be made formally.

TRICKS OF THE TRADE® Sometimes exam questions ask how project control is different in a procurement environment. These types of questions can be particularly difficult for those with little procurement experience. Some possible answers include:

- The seller's organization has a different culture and different procedures than the buyer's organization.
- The buyer and seller have different objectives. The seller's objective is to generate revenue, and the buyer's objective is to complete the work.
- It is not as easy to see problems on the project when the contracted work is being done in a different location.
- There is a greater reliance on reports to determine if a problem exists.
- There is a greater reliance on the relationship between the buyer's project manager and the seller's project manager in terms of resolving issues not covered in the wording of the contract.

Now let's go into detail with the following exercise. What specific work actions do you think must be done during the Control Procurements process? (Do not just look at the answers! Do the exercise once, and you will not have to do it again. Only look at the answers, and you will have to spend three times as long to learn this information.)

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Exercise Describe the specific actions involved in the Control Procurements process.

Answer Be careful while reading over the following list. Do you understand what each of these actions is and how long it might take? Go slowly, and imagine what it would take to handle each one for a multimillion-dollar construction project. (The items in the list are in no particular order.)

Imagine that you are building an office building, and you are the project manager for the building's owner. During this process you may do the following:

- Review invoices. Were they correctly submitted? Do they have all the required supporting information? Are the charges allowable under the contract?
- Evaluate whether a change is needed and is within the approved scope of the project.
- Submit changes through integrated change control as necessary.
- Document and record *everything*. This includes phone calls with the seller, emails, requested changes, and approved changes.
- Manage and integrate approved changes.

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- Authorize payments to the seller.
- Interpret what is and what is not in the contract.
- Interpret what the contract means.
- Resolve disputes.
- Make sure only authorized people are communicating with the seller.
- Work with the procurement manager on requested and approved changes and contract compliance.
- Hold procurement performance review meetings with your team and the seller.
- Report on performance—this means your own performance as well as the seller's performance.
- Monitor cost, schedule, and technical performance against the contract, including all of its components, such as terms and conditions and the procurement statement of work.
- Understand the legal implications of actions taken.
- Control quality according to what is required in the contract.
- Issue claims and review claims submitted by the seller.
- Authorize the seller's work to start at the appropriate time, coordinating the seller's work with the work of the project as a whole.
- Communicate with the seller and with others.
- Manage interfaces among all the sellers on the project.
- Send copies of changes to the appropriate parties.
- Accept verified deliverables.
- Validate that the correct scope is being done.
- Validate that changes are giving the intended results.
- Perform inspections and audits.
- Identify risks to the completion of future work.
- Reestimate risks, costs, and schedule.
- Monitor and control risk.
- Perform contract closure for each contract as it is complete or terminated.
- Analyze the procurement process for lessons learned, and make recommendations to the organization for improvement.
- Accept final deliverables from the seller, and make final payments.

Now the hard part. The exam will require you to know that management efforts, issues, and potential trouble spots are different under each type of contract, meaning there will be different things you will need to do depending on the type of contract you have. It is critical to be able to apply this concept on your own projects, and there could be up to seven questions on the exam that require you to understand it. So let's try an exercise.

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Exercise Hopefully, you have built a strong working relationship with the seller. But what if the seller has financial troubles, changes owners, or did not include major pieces of the work in their estimate? A good relationship can go bad in an instant. Describe the specific things you must watch out for and spend your time managing during the Control Procurements process for each of the three main types of contracts, regardless of what the relationship is like between the buyer and seller.

Fixed-Price Contract

Time and Material Contract

Cost-Reimbursable Contract

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Answer This is not a complete list! Think of what other actions may be taken.

Fixed-Price Contract
Look for the seller cutting scope.
Watch for the seller cutting quality.
When the contract requires the seller's costs to be transparent, make sure the costs are real costs that have been incurred (not future costs)—unless there is an agreement stating otherwise.
Be alert for overpriced change orders.
Check for scope misunderstandings.

Time and Material Contract
Provide day-to-day direction to the seller.
Attempt to get concrete deliverables.
Make sure the project length is not extended.
Confirm that the number of hours spent on work is reasonable.
Watch for situations in which switching to a different form of contract makes sense (for example, you determine a design statement of work under a T&M contract and then switch to a fixed-price contract for completion of the work).

Cost-Reimbursable Contract
Audit every invoice.
Make sure all the costs are applicable and chargeable to your project.
Monitor to confirm the seller's work is progressing efficiently.
Watch for the seller adding resources to your project that do not add value or perform real work.
Look for resources being shifted from what was promised in the original proposal.
Disallow seller charges that were not part of the original plan.
Reestimate the cost of the project.

The following tools and techniques can be used during the Control Procurements process.

Performance Reviews PAGE 498 During the Control Procurements process, the buyer's project manager analyzes all available data to verify that the seller is performing as they should. This is called a performance review. Often, the seller is present to review the data and, more importantly, to discuss what the buyer can do differently to help advance the work. The purpose of this review is to determine if changes are needed to improve the buyer-seller relationship, what processes are being used, and how the work is progressing compared to the plan. Formal changes to the management plans or the contract may be requested as a result of this meeting.

Inspection PAGE 498 Inspections may involve walkthroughs of the project work site or reviews of deliverables produced to verify compliance with the procurement statement of work. Do deliverables meet specifications? Variances or deviations may trigger change requests.

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Audits PAGE 498 An audit is performed by a team that includes representatives of both the buyer and the seller in a procurement. The purpose of the audit is to confirm that the seller's activities are in compliance with approved procurement policies and processes. Variances are identified, and adjustments are made accordingly. The results of such an audit can be used to improve the procurement process and to capture lessons learned.

Earned Value Analysis PAGE 498 Earned value analysis measurements identify scope, schedule, or cost variances from the performance measurement baseline. Variances are analyzed to determine their impact on the project. The results may be used to generate reports, forecast future performance, and predict actual completion dates and costs. Change requests may be requested based on the results of this analysis.

Trend Analysis PAGE 498 Trend analysis determines whether performance is getting better or worse, and it can be used to develop forecast estimates and estimate at completion.

Conflict Conflict is an important topic that may be addressed in tricky procurement questions on the exam. As we have discussed, in most projects that use a contract, someone other than the project manager controls the contract. In many cases, this person, who may be the procurement manager or contract administrator, is the only one with authority to change the contract. We have also said that the contract includes the procurement statement of work. Can you see the potential for conflict between the procurement manager and the project manager? The buyer's project manager may want to initiate a change to the scope or sequence of work identified in the procurement statement of work (an area seemingly under the project manager's control), but cannot do so without the procurement manager's approval. This adds another layer to the project manager's management activities that you may not have seen if you do not work with procurements.

Claims Administration PAGE 498 Conflict can also occur between the buyer and the seller, and may result in the seller submitting a claim against the buyer. A claim is an assertion that the buyer did something that has hurt the seller, and the seller is now asking for compensation. Another way of looking at claims is that they are a type of seller-initiated change requests. Claims can get nasty. Imagine a seller that is not making as much profit as they had hoped, issuing claims for every action taken by the buyer. Imagine the number of claims that can arise if you are working with a fixed-price contract and an incomplete procurement statement of work.

Claims are usually addressed through the contract change control system. The best way to settle them is through negotiation or the use of the dispute-resolution process specified in the contract. Many claims are not resolved until after the work is completed.

Contract Interpretation Contract interpretation is never easy and frequently requires a lawyer's assistance. However, the exam may describe a simple situation about a conflict over interpretation of a contract and then ask you to determine the correct answer.

TRICKS OF THE TRADE Contract interpretation is based on an analysis of the intent of the parties, as reflected in the language of the contract, along with a few guidelines for interpreting that language. One such guideline is that the contract supersedes any memos, conversations, or discussions that may have occurred prior to the contract signing. Therefore, if a requirement is not in the contract, it does not have to be met, even if it was agreed upon prior to signing the contract. The following is an exercise on intent.

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Exercise In each row, circle the item on the left or right side that would "win" in a dispute over contract interpretation.

Contract language	*Or*	A memo drafted by one of the parties describing proposed changes after the contract is signed
Contract language	*Or*	A memo signed by both parties before the contract is signed that describes what was agreed to during negotiations
Contract terms and conditions	*Or*	Procurement statement of work
Common definition	*Or*	The intended meaning (without supplying a definition)
Industry use of the term	*Or*	Common use of the term
Special provisions	*Or*	General provisions
Typed-over wording on the contract	*Or*	A handwritten comment on the contract that is also initialed
Numbers	*Or*	Words
Detailed terms	*Or*	General terms

Answer The correct answers (in bold) show more clearly the intent of the parties to the contract.

Contract language	*Or*	A memo drafted by one of the parties describing proposed changes after the contract is signed
Contract language	*Or*	A memo signed by both parties before the contract is signed that describes what was agreed to during negotiations
Contract terms and conditions	*Or*	**Procurement statement of work**

The answer here depends on the Order of Precedence Clause in the contract that describes which terms and conditions take precedence over the others in the event of a conflict between them.

Common definition	*Or*	The intended meaning (without supplying a definition)
Industry use of the term	*Or*	Common use of the term
Special provisions	*Or*	General provisions
Typed-over wording on the contract	*Or*	**A handwritten comment on the contract that is also initialed**
Numbers	*Or*	**Words**
Detailed terms	*Or*	General terms

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The following sections outline the primary outputs of the Control Procurements process.

Change Requests PAGE 499 While the work is underway, the buyer's needs may change, and, as a result, the buyer may issue a change order to the contract. The impacts of the contract changes are then negotiated by the two parties. Changes to the contract may be requested throughout the procurement process, and are handled as part of the project's integrated change control efforts, along with all other project changes. Any changes need to be analyzed for their impacts on the rest of the project.

If you do not have experience working with contracts, you should be aware of the concept of constructive changes, which do not result from formal change requests. Rather, constructive changes occur when the buyer, through actions or inactions, limits the seller's ability to perform the work according to the contract. This can include over-inspection or failure to cooperate. The buyer can also cause the seller to file a claim for damages if the buyer fails to uphold their end of the contract (for example, failing to review documents or deliverables on time). Project managers need to be particularly sensitive to constructive changes. Such changes often happen during the course of managing a procurement. A simple direction to the contractor to perform certain work that may seem minor can result in a constructive change that costs the company a lot of money if that change is outside the scope of the contract.

Procurement Documentation Updates PAGE 499 Throughout the Control Procurements process, data on the contract and contract performance by both the buyer and the seller is gathered and analyzed. This information needs to be updated and archived.

Because a contract is a formal, legal document, thorough records relating to the contract must be kept. A records management system may need to be used to keep procurement documentation complete, organized, and accessible. Record keeping can be critical if actions taken during a procurement are ever questioned after the procurement is completed, such as in the case of unresolved claims or legal actions. Records may also be necessary to satisfy insurance requirements. For many projects, every email, every payment, and every written and verbal communication must be recorded and stored. On other projects, information about the weather and the number of people on the buyer's property each day may be recorded. Whatever information is appropriate for the particular industry and project is saved.

On large or complex projects, a records management system can be quite extensive, with one person assigned just to manage these records. A records management system can include indexing systems, archiving systems, and information retrieval systems.

Closed Procurements PAGE 499 Closing procurements consists of tying up all the loose ends, verifying that all work and deliverables are accepted, finalizing open claims, and paying withheld retainage for each of the procurements on the project. The buyer will provide the seller with formal notice that the contract has been completed. There may be some obligations, such as warranties, that will continue after the procurement is closed.

Procurements are closed:

- When a contract is completed
- When a contract is terminated before the work is completed

Many people who are new to procurement do not realize a contract can be terminated before the work is complete. The contract should have provisions for termination, which can be done for cause or for convenience.

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When many changes to a procurement are required, it may be best to terminate the contract and start fresh by negotiating a new contract with the existing seller or by finding a new seller. This is a drastic step that should be taken only when the existing contract no longer serves the purposes of defining all the work, roles, and responsibilities.

The buyer may terminate a contract for cause if the seller breaches the contract (does not perform according to the contract). This illustrates another reason the contract should clearly identify all the work required by the buyer. The buyer can also terminate the contract before the work is complete if they no longer want the work done (termination for convenience). Sellers need to realize this can happen.

A seller is rarely allowed to terminate a contract, but it could be appropriate on some projects. In any case, termination can result in extensive negotiations on what costs the buyer will pay. This is controlled by the language of the contract. In a termination for convenience, the seller is usually paid for work completed and work in process. If the contract is terminated for cause due to a default, the seller is generally paid for completed work but not for work in process. The seller may also be subject to claims from the buyer for damages. In any case, termination is a serious issue, and one that has lasting effects on the project. Termination negotiations can be drawn out long after the work has stopped—highlighting yet another reason why details of the project must be documented on an ongoing basis.

All procurements must be closed out, no matter the circumstances under which they stop, are terminated, or are completed. Closure is a way to accumulate some added benefits, such as lessons learned. It provides value to both the buyer and the seller and should not be omitted under any circumstances.

TRICKS OF THE TRADE Some people find the difference between the Close Project or Phase process and procurement closure confusing. This often seems to come up as a question on the exam. The answer is easy, though, if you think of project closure as closing out a project or phase and procurement closure as closing out a procurement. Depending on what choices the exam gives you, the answer could be:

- There may be many procurements in one project, so there can be many procurement closures, but Close Project or Phase only happens at the end of the project or phase. All procurements must be closed as part of monitoring and controlling, before final project closure.
- Upon completion of the contract for each procurement, the project manager performs a review of the procurement process on the contract and the performance of the seller before closing out the procurement. When the project as a whole is completed later, the project manager performs the final administrative and financial closure along with other processes required to close out the project.
- To make it a little more confusing, there may be questions that ask about the frequency of project closure and procurement closure. Read these questions carefully, as the way the questions are written will help you select the right answer. For projects that are managed in phases, such as a design phase, testing phase, and installation phase, the Close Project or Phase process occurs at the end of each project phase as well as at the end of the project as a whole. Make sure you understand this for the exam. In contrast, procurement closure is done at the completion of each contract.
- To protect the legal interests of both parties, procurement closure requires detailed record keeping and must be done more formally than is generally required for project closure.

Make sure you remember these points for the exam.

Now let's think about the real world. What do you think needs to be done at the end of the procurement in order to say the procurement is indeed finished? Wouldn't it be substantially similar to what needs to be done when you close out a project in the Close Project or Phase process?

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Exercise Describe what work must be done during procurement closure.

Answer As you read the answer, think about how similar closing procurements is to the Close Project or Phase process. Procurement closure includes all the following:

- **Product validation** This involves checking to see if all the work was completed correctly and satisfactorily. The product of the procurement should be the same as what was requested. The product of the procurement should also meet the buyer's needs.
- **Procurement negotiation** The final settlement of all claims, invoices, and other issues may be handled through negotiations or through the dispute resolution process established in the contract.
- **Financial closure** Financial closure includes making final payments and completing cost records.
- **Audit of the procurement process** This is a structured review of only the procurement process. Do not think of this as auditing costs, but rather as capturing lessons learned from the procurement process that can help improve other procurements. Normally this is done by the procurement manager and project manager, but companies that want to improve their processes may also involve the seller. Remember, this is talking about how the whole procurement process went.
- **Updates to records** This involves making sure all records of the procurement are complete and accessible. This information could include whatever has been recorded to date on the project. These records will become part of the procurement file (described later in this discussion).
- **Final contract performance reporting** Think of this as creating a final report. First, you need to analyze and document the success and effectiveness of the procurement and the seller, and then turn that into a final report.

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- **Lessons learned** Procurement lessons learned are received from everyone involved in the project, even the seller, and become part of the lessons learned for the project. They often include a discussion of what went right, what went wrong, and what can be done better next time. Lessons learned are created as a result of the audit. They then become part of the organizational process assets. Lessons learned are documented and shared throughout the organization.
- **Procurement file** Creating the procurement file involves putting all emails, letters, conversation records, payment receipts, reports, and anything else related to the procurement into an organized file. This file will be stored for use as historical records and will help protect the project in case of arguments or legal action regarding what was done and not done according to the contract. The project manager, with the help of the procurement manager, decides what documents need to be kept.
- **Other** Procurement closure could also include arranging for storage of procurement records and drawings, creating and delivering legal documents, or returning property used for the procurement to its owner.

When closure is completed and the seller has received formal sign-off from the buyer that the products of the procurement are acceptable, the procurement is closed. Expect questions on the exam that describe a situation and require you to determine whether the procurement is closed. In gaining formal acceptance, the seller is also working to measure customer satisfaction. Often, a formal customer satisfaction survey may be included in a seller's closure records. The Close Project or Phase process includes confirmation that contract closure has been done satisfactorily.

Exercise The Procurement Process Now that you know so much about procurement, test your knowledge by completing the following charts. Notice the word "Actions." For the exam, you need to know what needs to be done during each step as well as what you have when you are done with a process (outputs). Because of the number of questions on the exam that ask about the procurement process, this is one of the most important exercises in this chapter.

Recreate the procurement management process, including the outputs, in the tables on the following two pages. Even with one reading of this chapter, you should get most of the key actions and outputs correct. After you have read the chapter two or three times, you should be almost 100 percent accurate. This exercise is about understanding the most important actions of procurement management, not memorization. Create the chart three times, and you should know it well enough for the exam.

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Plan Procurement Management	Conduct Procurements	Control Procurements
	Key Actions	

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Plan Procurement Management	Conduct Procurements	Control Procurements
	Key Outputs	

TRICKS OF THE TRADE Here is a trick for understanding the process without memorizing the whole thing—know only the outputs! If a question describes some activity and that activity occurs after the procurement documents are created and before the contract is signed, then it must be taking place as part of the Conduct Procurements process. If it is taking place during the time after the contract is signed through when the work is substantially done, it must be occurring during the Control Procurements process.

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Answer The following actions and outputs are the ones you should give the most attention to when preparing for the exam.

Plan Procurement Management	Conduct Procurements	Control Procurements
	Key Actions	
• Perform make-or-buy analysis. • Create a procurement management plan. • Create a procurement strategy for each procurement. • Create a procurement statement of work for each procurement. • Select the appropriate contract type. • Create terms and conditions, including standard and special conditions. • Create bid documents. • Determine source selection criteria. • Gather and analyze data on prospective sellers, the market, and market price. • Estimate time and cost for contract and work.	• Find potential sellers through advertising, a preapproved seller list, or other means. • Send procurement documents. • Hold a bidder conference. • Answer sellers' questions. • Receive the seller responses. • Compare the proposals to the source selection criteria using a weighting or screening system to pick/shortlist the sellers. • Receive presentations from seller(s). • Compare to independent estimates. • Hold negotiations. • Use interpersonal and team skills, such as negotiation. • Allocate risk to sellers when appropriate.	• Understand the legal implications of your actions. • Hold procurement performance reviews. • Request changes. • Administer claims. • Manage interfaces among sellers. • Monitor, analyze, and report on performance against the contract. • Review cost submittals, and make payments. • Perform inspections and audits. • Maintain records of everything. • Manage relationships. • Accept verified deliverables. • Perform procurement audits. • Negotiate settlements. • Create lessons learned. • Complete final contract performance reporting. • Validate the product. • Issue formal acceptance. • Update records. • Create a procurement file. • Perform financial closure.

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Plan Procurement Management	Conduct Procurements	Control Procurements
	Key Outputs	
• Make-or-buy decisions • Procurement management plan • Procurement statements of work • Procurement strategies • Bid documents • Selected contract type • Source selection criteria • Change requests • Independent contract estimates	• Selected sellers • Signed contracts • Resource calendars • Change requests • Project management plan updates • Project documents updates • Recommendations and updates to the processes and procedures for organizational procurement practices • Organizational process assets updates	• Substantial completion of contract requirements and deliverables • Work performance information • Change requests • Project management plan updates • Project documents updates (including updates to procurement documents) • Organizational process assets updates • Formal acceptance • Closed procurements • Lessons learned and records updates

Exercise Here is another exercise to review what we discussed in this chapter. To pass the exam, you must understand the project manager's role in procurements. After reading this chapter, how would you describe the project manager's role?

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Answer As the project manager, you should:

- Know the procurement process so you integrate all procurements into your project.
- Understand what contract terms and conditions mean so you can read and understand contracts.
- Make sure the contract contains all the scope of work and all the project management requirements, such as attendance at meetings, reports, actions, and communications deemed necessary to minimize problems and miscommunications with the seller(s).
- Identify risks, and incorporate mitigation and allocation of risks into the contracts to decrease project risk.
- Help tailor the contract to the unique needs of the project while it is being written.
- Include adequate time in the project schedule to complete the procurement process.
- Be involved during contract negotiations to protect the relationship with the seller.
- Protect the integrity of the project and the ability to get the work done by making sure the procurement process goes as smoothly as possible.
- Help make sure all the work in the contract is done—including reporting, inspections, and legal deliverables, such as the release of liens and ownership of materials—not just the technical scope.
- Do not ask for something that is not in the contract without making a corresponding change to the contract.
- Work with the procurement manager to manage changes to the contract.

That is the procurement process! Was a lot of this new to you? If you are inexperienced in working with procurements, reread this chapter, and try to visualize how the different topics apply to a large project. The visualization will help you understand the process in a real way, so you know what proper project management is and what your involvement in the procurement process should be.

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Practice Exam

1. Once signed, a contract is legally binding unless:
   A. One party is unable to perform.
   B. One party is unable to finance its part of the work.
   C. It is in violation of applicable law.
   D. It is declared null and void by either party's legal counsel.

2. With a clear procurement statement of work, a seller completes work as specified, but the buyer is not pleased with the results. The contract is considered to be:
   A. Null and void
   B. Incomplete
   C. Complete
   D. Waived

3. You are preparing procurement documents for the building of a community center. There will be government standards, guidelines, and possibly regulations involved. You need to structure the procurement documentation in order to get proposals from qualified prospective sellers interested in doing business on a particular project. All the following statements concerning procurement documents are incorrect except:
   A. Well-designed procurement documents can simplify comparison of responses.
   B. Procurement documents must be rigorous with little flexibility to allow consideration of seller suggestions.
   C. In general, procurement documents should not include selection criteria.
   D. Well-designed procurement documents do not include a procurement statement of work.

4. A project manager for the seller is told by her management that the project team should do whatever possible to be awarded incentive money. The primary objective of incentive clauses in a contract is to:
   A. Reduce costs for the buyer.
   B. Help the seller control costs.
   C. Synchronize objectives.
   D. Reduce risk for the seller by shifting risk to the buyer.

5. All the following statements about change control are incorrect except:
   A. A fixed-price contract will minimize the need for change control.
   B. Changes seldom provide real benefits to the project.
   C. Contracts should include procedures to accommodate changes.
   D. More detailed specifications eliminate the causes of changes.

6. A routine audit of a cost-reimbursable (CR) contract determines that overcharges are being made. If the contract does not specify corrective action, the buyer should:
   A. Continue to make project payments.
   B. Halt payments until the problem is corrected.
   C. Void the contract and start legal action to recover overpayments.
   D. Change the contract to require more frequent audits.

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7. Buyers and sellers have many common goals, but some goals of the buyer will not benefit the seller. Likewise, the seller will sometimes have goals that conflict with those of the buyer. These could negatively affect the project if contracts are not negotiated appropriately. The primary objective of contract negotiations is to:
   A. Get the most from the other side.
   B. Protect the relationship.
   C. Get the highest monetary return.
   D. Define objectives and stick to them

8. A seller is working on a cost-reimbursable (CR) contract when the buyer decides he would like to expand the scope of services and change to a fixed-price (FP) contract. All the following are the seller's options except:
   A. Completing the original work on a cost-reimbursable basis and then negotiating a fixed price for the additional work
   B. Completing the original work and rejecting the additional work
   C. Negotiating a fixed-price contract that includes all the work
   D. Starting over with a new contract

9. You have narrowed down the prospective sellers, and conducted a bidder conference. You are prepared to enter into a contract with the desired seller, and are checking that everything is in order for final contract negotiations and contract finalization. You have only a couple of points to clarify with the seller. All the following must be present to have a contract except:
   A. A procurement statement of work
   B. Acceptance
   C. The address of the seller
   D. Buyers' signatures

10. You are the project manager working on a complex structural engineering project. Not an engineer yourself, you will require the assistance of several subject matter experts during the procurement process. In addition to the subject matter experts, the organization has a procurement department that will provide resources for the procurement process on this project. Which of the following best describes the project manager's role in the procurement process?
    A. The project manager has only minor involvement.
    B. The project manager should be the negotiator.
    C. The project manager should provide an understanding of the risks of the project.
    D. The project manager should tell the contract manager how the contracting process should be handled.

11. You are working to plan procurements for a project that will develop a prototype cruise ship. The prototype will be tested, perfected, and then used to create a small fleet. In addition to creating a procurement management plan, you must put together bid documents describing the project needs and the criteria that will be used to select a seller. Which of the following will occur during this project's Plan Procurement Management process?
    A. Make-or-buy decisions
    B. Answering sellers' questions about the bid documents
    C. Advertising
    D. Proposal evaluation

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12. Which of the following is the best thing for a project manager to do in the Conduct Procurements process?
    A. Evaluate risks.
    B. Select a contract type.
    C. Perform market research.
    D. Answer sellers' questions about the procurement documents.

13. The sponsor is worried about the seller deriving extra profit on the cost plus fixed fee (CPFF) contract. Each month he requires the project manager to submit CPI calculations and an analysis of the cost to complete. The project manager explains to the sponsor that extra profits should not be a worry on this project because:
    A. The team is making sure the seller does not cut scope.
    B. All costs invoiced are being audited.
    C. There can only be a maximum 10 percent increase if there is an unexpected cost overrun.
    D. The fee is only received by the seller when the project is completed.

14. You are considering using a fixed-price (FP) contract, because you have well-defined requirements for your construction project. With your requirements and your understanding of the seller's competition, you are confident you will be able to establish a complete statement of work. The fee or profit in this type of contract is:
    A. Unknown
    B. Part of the negotiation involved in paying every invoice
    C. Applied as a line item to every invoice
    D. Determined with the other party at the end of the project

15. As part of closing a cost-reimbursable contract on a project, what must the buyer remember to do?
    A. Decrease the risk rating of the project.
    B. Audit seller's cost submittals.
    C. Evaluate the fee she is paying.
    D. Make sure the seller is not adding resources.

16. The sponsor and the project manager are discussing what type of contract the project manager plans to use on the project. The sponsor points out that the performing organization paid a design team a lot of money to come up with the design. The project manager is concerned that the risk for the buyer be as small as possible, and recommends a fixed-price contract. An advantage of a fixed-price contract for the buyer is:
    A. Cost risk is lower.
    B. Cost risk is higher.
    C. There is little risk.
    D. Risk is shared by all parties.

17. You are trying to make sure all records from the procurement are documented and indexed. Which of the following do you not have to worry about?
    A. Proposal
    B. Procurement statement of work
    C. Terms and conditions
    D. Negotiation process

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18. A project has a tight budget when you begin negotiating with a seller for a piece of equipment. The seller has told you the equipment price is fixed. Your manager has told you to negotiate the cost with the seller. Your assessment is that the piece of equipment has been offered at inflated pricing. What is your best course of action?
    A. Make a good faith effort to find a way to decrease the cost.
    B. Postpone negotiations until you can convince your manager to change his mind.
    C. Hold the negotiations, but only negotiate other aspects of the project.
    D. Cancel the negotiations.

19. Which of the following is an advantage of centralized contracting?
    A. Increased expertise
    B. Easier access
    C. The project manager doesn't have to be involved
    D. More loyalty to the project

20. With which type of contract is the seller most concerned about project scope?
    A. Fixed-price
    B. Cost plus fixed fee
    C. Time and material
    D. Purchase order

21. Your company has an emergency and needs contracted work done as soon as possible. Under these circumstances, which of the following would be the most helpful to add to the contract?
    A. A clear procurement statement of work
    B. Requirements as to which subcontractors can be used
    C. Incentives
    D. A force majeure clause

22. You are the project manager of a relatively small project to build out improvements to a small shop in a pedestrian mall. The project is using a time and material contract, and you know you must be involved in negotiations. Which of the following is an advantage of a time and material contract?
    A. A time and material contract is less work for the buyer to manage.
    B. The seller has a strong incentive to control costs.
    C. The total price is known.
    D. Negotiations are less extensive.

23. The project team is assessing the responses of prospective sellers who have submitted proposals. One team member argues for a certain seller while another team member wants the project to be awarded to a different seller. What part of the procurement process is the team in?
    A. Plan Procurement Management
    B. Control Procurements
    C. Negotiate Contracts
    D. Conduct Procurements

24. A project manager is in the middle of creating a request for proposal (RFP). What part of the procurement process is he in?
    A. Conduct Procurements
    B. Plan Procurement Management
    C. Administer Procurements
    D. Make-or-Buy Analysis

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25. Your program manager has advised that you need to protect the organization from financial risk. In planning a new project, you realize there is limited scope definition related to the work needed to fulfill the contract. What is the best type of contract to choose?
    A. Fixed-price (FP)
    B. Cost plus percentage of cost (CPPC)
    C. Time and material (T&M)
    D. Cost plus fixed fee (CPFF)

26. Negotiations between two parties are becoming complex, so Party A makes some notes that both parties sign. However, when the work is being done, Party B claims they are not required to provide an item they both agreed to during negotiations, because it was not included in the subsequent contract. In this case, Party B is:
    A. Incorrect, because both parties must comply with what they agreed on
    B. Correct, because there was an offer
    C. Generally correct, because both parties are only required to perform what is in the contract
    D. Generally incorrect, because all agreements must be upheld

27. Your project has just been fast tracked, and you are looking to quickly bring in a subcontractor to complete networking. There is no time to issue a request for proposal (RFP), so you choose to use a company you have used many times before for software development. A primacy concern in this situation is:
    A. Collusion between subcontractors
    B. The subcontractor's qualifications
    C. The subcontractor's evaluation criteria
    D. Holding a bidder conference

28. The project manager, the procurement manager, and the project sponsor are discussing the project costs and whether it is better to have their own company do some of the project work or hire another company to do all the work. Generally, it would be better for the organization to do the work internally if:
    A. There is a lot of proprietary data.
    B. You have the expertise, but you do not have the available manpower.
    C. You do not need control over the work.
    D. Your company resources are limited.

29. After much hard work, the procurement statement of work for the project is completed. However, even after gaining agreement that the procurement statement of work is complete, the project manager is unsure of whether it actually addresses all the buyer's needs. The project manager is about to attend the bidder conference. He asks you for advice on what to do during the session. Which of the following is the best advice you can give him?
    A. You do not need to attend this session; the procurement manager will hold it.
    B. Make sure you negotiate project scope.
    C. Make sure you give all the sellers the opportunity to ask questions.
    D. Let the project sponsor handle the meeting so you can be the good guy in the negotiation session.

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30. A seller is awarded a contract to build a pipeline. The contract terms and conditions require a work plan to be issued for the buyer's approval prior to commencing work, but the seller fails to provide one. Which of the following is the best thing for the buyer's project manager to do?
    A. File a letter of intent.
    B. Develop the work plan and issue it to the seller to move things along.
    C. Issue a default letter.
    D. Issue a stop work order to the seller until a work plan is prepared.

31. Procurement closure is different from the Close Project or Phase process in that procurement closure:
    A. Occurs before Close Project or Phase
    B. Is the only one to involve the customer
    C. Includes the return of property
    D. May be done more than once for each contract

32. You have just started work on a procurement when management decides to terminate the contract. What should you do?
    A. Go back to the Plan Procurement Management process.
    B. Go back to the Conduct Procurements process.
    C. Complete the Control Procurements process.
    D. Stop working, and consider the procurement finished.

33. The project team is considering the prospective sellers who have submitted proposals. One team member supports a certain seller while another team member wants the project to be awarded to a different seller. The project manager should remind the team that the best thing to focus on in order to make a selection is the:
    A. Procurement documents
    B. Procurement audits
    C. Source selection criteria
    D. Procurement management plan

34. The $800,000 contract specifies that the seller will bill the buyer at $10,000 per month. However, the seller is able to complete the project work faster than planned. Therefore, they bill the buyer for $15,000 for the work performed in the past month. The buyer should:
    A. Send a breach of contract notice.
    B. Pay the invoice, as they will save on future payments.
    C. Meet with the seller to discuss the overcharge.
    D. Adjust the contract to allow for variations in monthly billings.

35. You are the project manager at a software development company, leading a project to develop an innovative application for a client. The project has followed a strict software engineering process. The requirements have been specified in detail, resulting in extensive functional and technical specification documents. Your project team member delivers an interim project deliverable to the buyer. However, the buyer refuses the deliverable, stating it does not meet the requirement on page 300 of the technical specifications. You review the document and find that you agree. What is the best thing to do?
    A. Explain that the contract is wrong and should be changed.
    B. Issue a change order.
    C. Review the requirements, and meet with the responsible team member to review the WBS dictionary.
    D. Call a meeting of the team to review the requirement on page 300.

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36. Your organization has recently been informed that several of the regulations related to how your products are manufactured will change in six months. In planning for work to change certain design and production processes, you determine you will need to work with several external organizations to do the work. Which type of contract do you not want to use if you do not have enough help to audit invoices?
    A. Cost plus fixed fee (CPFF)
    B. Time & material (T&M)
    C. Fixed-price (FP)
    D. Fixed price incentive fee (FPIF)

37. A new project manager is about to begin creating the procurement statement of work. One stakeholder wants to add many items to the procurement statement of work. Another stakeholder only wants to describe the functional requirements. The project is important for the project manager's company, but a seller will do the work. How would you advise the project manager?
    A. The procurement statement of work should be general, to allow the seller to make their own decisions.
    B. The procurement statement of work should be general, to allow for clarification later.
    C. The procurement statement of work should be detailed, to allow for clarification later.
    D. The procurement statement of work should be as detailed as necessary for the type of project.

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Answers

1. **Answer** C
   Explanation Once signed, a contract is binding to both sides. Contracts typically state that either side can choose to terminate the agreement by negotiating a settlement based on work already performed. Generally, the inability to perform or get financing, or one party's belief that the contract is null and void does not change the fact that the contract is binding. If, however, both sides agree to terminate the contract, the contract can move into closure. An illegal contract is not enforceable.

2. **Answer** C
   Explanation If the seller completes the work specified in the procurement statement of work, the contract is considered complete. That does not mean the same thing as the procurement being closed. Procurement closure must still occur. However, in this situation, the contract work is completed.

3. **Answer** A
   Explanation Often, the seller is required to inform the buyer of anything that is missing or unclear in the procurement documents. It is in the buyer's best interest to discover missing items, since it will save the buyer money and trouble to correct the problem early. Procurement documents must include terms and conditions and selection criteria, as well as documentation of all the work that is to be done (which includes the procurement statement of work). This is so the seller can price the project and know what is most important to the buyer. Well-designed procurement documents can simplify comparison of responses. This is an important point and is the best answer.

4. **Answer** C
   Explanation Incentives are meant to bring the objectives of the seller in line with those of the buyer, so both are working toward the same objective.

5. **Answer** C
   Explanation There are always good ideas (changes) that can add benefit to the project, regardless of the contract type. Although detailed specifications may reduce the need for changes, they do not eliminate all the causes. Contracts should include procedures to accommodate changes.

6. **Answer** A
   Explanation Halting all payments would be a breach of contract on the buyer's part. Voiding the contract and beginning legal action is too severe and cannot be done unilaterally. Changing the contract to require more frequent audits does not solve the problem presented. A choice that said, "Halt payments on the disputed amount" would probably be the best answer, but it is not offered. The best choice available is to continue to make the payments while working to resolve the issue.

7. **Answer** B
   Explanation As a project manager, you want to develop a good relationship during negotiations that will last throughout the project. Negotiations are not about getting the most from the other side (win-lose), as such actions will not create a good relationship. That doesn't mean, however, the buyer sacrifices what is best for the organization.

8. **Answer** D
   Explanation The seller can try to negotiate changes or simply continue the original contract and refuse requests to complete additional work, but the seller cannot unilaterally decide to start over with a new contract. Both parties have to agree to this option through negotiations.

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9. **Answer** C
Explanation Many people miss the fact that a contract includes a procurement statement of work. To have a contract, you must also have acceptance. One set of signatures is not enough; you must have sign-off (acceptance) from both parties, not just from the buyer. The address of the seller is not required, and therefore is the exception.

10. **Answer** C
Explanation The project manager knows the project risks. They need to make sure provisions are included in the contract to address these risks.

11. **Answer** A
Explanation Answering sellers' questions, advertising, and proposal evaluation occur during the Conduct Procurements process. Make-or-buy decisions are made earlier—in the Plan Procurement Management process.

12. **Answer** D
Explanation Risk analysis is done before the Conduct Procurements process begins, as procurement is a risk mitigation and transference tool. Selecting a contract type is part of Plan Procurement Management. Market research is also performed in the Plan Procurement Management process, to enable selection of the appropriate sellers for the needs of the project. During the Conduct Procurements process, the project manager answers questions submitted by prospective sellers.

13. **Answer** B
Explanation Cutting scope decreases profits on this type of contract, so that would not be a way for the seller to generate extra profits. CPFF contracts generally do not limit fee increases. The fee in a CPFF contract is usually paid out on a continuous basis during the life of the project. One of the ways to change the profit in a cost plus fixed fee contract is to invoice for items not chargeable to the project. This would not be ethical by the seller but does not mean that a seller may not try it. Therefore, all invoiced costs should be audited.

14. **Answer** A
Explanation The fee or profit is known to the seller, but this question is asked from the buyer's perspective. The buyer does not know what profit the seller included in the response to the bid document and, therefore, will not know the profit in the fixed-price contract.

15. **Answer** B
Explanation Although a reserve might be decreased for the overall project when one of its procurements enters closure, the risk rating of the project is generally not affected. Evaluation of the fee should have been done during the Conduct Procurements process. Making sure the seller does not add resources should not be necessary, as the contracted work has been completed. Auditing the seller's cost submittals is a required aspect of the Control Procurements process.

16. **Answer** A
Explanation If you had trouble with this one, you need to remember that the questions are asked from the buyer's perspective unless otherwise noted. The seller has the most cost risk in a fixed-price contract, and the buyer's risk is lower because the buyer will not pay more if the seller does not control costs. The seller has the risk; if they do not control the costs, they could erode the profit margin and even lose money.

17. **Answer** D
Explanation The negotiation process is not a document. The proposal, procurement statement of work, and the contract terms and conditions are all records that need to be documented and indexed.

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18. **Answer** A
Explanation The best choice is to attempt to find a way to decrease the cost.

19. **Answer** A
Explanation Centralized contracting refers to a situation in which a procurement department exists to oversee procurements across the entire organization. Because there may be many procurements going on simultaneously, it may be difficult to get access to the procurement manager. As their attention is divided between multiple contracts, the procurement manager has less loyalty to any one project. Even with the procurement department leading a procurement, the project manager must participate in the process, so that is not an advantage. Increased expertise of the procurement manager is an advantage of centralized contracting.

20. **Answer** A
Explanation In a fixed-price contract, the seller has the cost risk and therefore wants to completely understand the procurement statement of work before bidding.

21. **Answer** C
Explanation If you follow the proper project management process, you always have good definition of scope (in this case, the procurement statement of work). In this situation, both good scope definition and incentives are required. Along with good scope definition, you need the seller to share your need for speed. Incentives bring the seller's objectives in line with the buyer's and thus would be the most helpful. Good scope definition alone does not ensure speed.

22. **Answer** D
Explanation Negotiation of a time and material contract is generally less extensive than negotiation of other contract types. The other choices are advantages of a fixed-price contract.

23. **Answer** D
Explanation Selected sellers are an output of the Conduct Procurements process.

24. **Answer** B
Explanation Bid documents are created during the Plan Procurement Management process. The request for proposal is one of those documents, so the project manager is in the Plan Procurement Management process.

25. **Answer** D
Explanation Of the options given, the only contract that limits fees for large projects with limited scope definition is cost plus fixed fee.

26. **Answer** C
Explanation Party B is only required to deliver what is defined in the contract.

27. **Answer** B
Explanation Although you have used this contractor before, how can you be sure the company is qualified to do the new work, since it is not exactly like the previous work? This is the risk you are taking.

28. **Answer** A
Explanation It is generally better to do the work yourself if using an outside company means you have to lose control or ownership of proprietary data to the other company.

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29. **Answer** C
Explanation The project manager should attend the bidder conference, although the procurement manager may lead it. Did you select negotiating scope? Sellers may ask questions about scope during the conference, but negotiations occur after the bidder conference, when the buyer selects one or more sellers with whom to negotiate. Allowing ample opportunity for all the prospective sellers to ask questions is one of the many challenges of a bidder conference. They may not want to ask questions while their competitors are present.

30. **Answer** C
Explanation When a seller does not perform according to the contract terms and conditions, they have defaulted and the project manager must take action. You might prefer a choice to investigate the default by contacting the seller and asking what is going on, but that choice is not available here. You must send the formal written notice as soon as you become aware of the default so that you do not give up any right to receive the work plan in the future. You can contact the seller for a discussion as the second thing you do. Therefore, the best choice is to let the seller know they are in default. The default notification letter will instruct the seller to meet the performance requirement.

31. **Answer** A
Explanation The customer may be involved in lessons learned and procurement audits, and would certainly be involved in formal acceptance. Both procurement closure and the Close Project or Phase process involve the return of property. Procurement closure is done once for each procurement, at the end of the contract. All procurements are closed before the project is closed.

32. **Answer** C
Explanation Even if the contract is terminated before completion, the procurement needs be closed out. The results of the procurement and its documentation are archived as historical records in the Control Procurements process.

33. **Answer** C
Explanation The source selection criteria are the primary tool for evaluating potential sellers and should be used by the team in order to make a selection.

34. **Answer** A
Explanation By paying the additional amount of this month's invoice, the buyer may waive the right to limit monthly costs to $10,000. The project has allocated $10,000 per month for this seller, and the buyer may not have the capacity to pay more each month. By agreeing to the terms of the contract, the seller is contractually obligated not to exceed that amount. A breach of contract notice from the buyer to the seller is the best way to handle this situation.

35. **Answer** C
Explanation This question is written from the perspective of the seller. The contract could be wrong or the customer could be wrong, but this should have been discovered earlier if proper project management was followed. A seller cannot issue a change order (although they could request one). Did you select calling a meeting of the team? If so, remember that proper project management does not mean making every decision with all the team members. The best choice involves reviewing the requirements documentation and meeting with the appropriate team member. If such a problem has arisen, it could mean something was wrong in the WBS dictionary or in how the team member completed the work.

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36. **Answer** A

Explanation If you got this question wrong, reread it. You need to audit invoices in all contract types, so how do you choose? Look for the answer that is best. In this case, it would be the choice that requires the greatest effort. A T&M contract should be used for low dollar and short duration contracts (remember that a T&M contract has no incentive to finish), so it does not have a high level of risk. FP and FPIF contracts cannot be best, because the risk to the buyer is limited. The buyer is still only going to pay the contracted price. In a CPFF contract, the buyer pays all costs. The seller could be charging the buyer for costs that should not be allocated to the buyer. Because of the size and dollar amount of this type of contract, and because the risk to the buyer is great, a CPFF contract requires the most auditing. In this case, you would not want to use a CPFF contract.

37. **Answer** D

Explanation When the seller has more expertise than the buyer, the procurement statement of work should describe performance or function rather than a complete description of work. In any case, the procurement statement of work should be as detailed as possible.

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