The term capital budgeting is used to describe how managers plan significant investments in projects that have long-term implications.

A dollar today is worth more than a dollar earned a year from now.

The net present value of a project is: used in determining whether or not a project is an acceptable capital investment. The difference between the present value of cash inflows and present value of cash outflows for a project.

The internal rate of return method indicates: the rate of return promised by an investment project over its useful life.

Match each capital investment term with its meaning.

Cost of capital: Average rate of return that must be paid to long-term creditors and shareholders for use of their funds.
Working capital: Current assets minus current liabilities.
Initial investment: Funds needed to purchase a capital asset or begin a capital investment project.
Salvage value: Funds gained from the sale of a capital asset.

Place the following terms in the appropriate order to create the equation used to calculate the simple rate of return.
Annual incremental net operating income / Initial investment

The payback period is the length of time that it takes for a project to recover its initial cost from the net cash inflows that it generates.

Which of the following are appropriately classified as capital budgeting decisions?
Purchasing new equipment to reduce cost
Acquiring a new facility to increase capacity
Choosing to lease or buy new equipment
Determining which equipment to purchase among available alternatives
Deciding to replace old equipment

Match the following internal rate of return and required rate of return comparisons with the appropriate conclusions about a proposed project.
The internal rate of return is equal to or greater than the required rate of return: The project is considered to be acceptable.
The internal rate of return is less than the required rate of return: The project should be rejected.

The two capital budgeting approaches that use discounted cash flows are the net present value method and the internal rate of return method.

The required rate of return: should be equal to or greater than the cost of capital.
is the minimum rate of return a project must yield to be acceptable.
The Eye Clinic of Dr. Christensen is investing in some equipment to perform corrective eye surgery. It is expected that the equipment purchase will generate an internal rate of return of 24%. This equipment was chosen over equipment to perform cataract eye surgery. Thus, the internal rate of return of the cataract eye surgery equipment: must have been less than the internal rate of return of the corrective eye surgery equipment.

Match the net present value analysis with the appropriate reasoning.
**Acceptable project with a positive net present value**: The project promises a return greater than the required rate of return.
**Acceptable project with a net present value of zero**: The project promises a return equal to the required rate of return.
**Unacceptable project with a negative net present value**: The project promises a return less than the required rate of return.

Place the following steps used to calculate net present value in the correct order.
1. Determine the discount rate using the minimum required return.
2. Find the PV factors using the discount rate & timing of each cash flow.
3. Multiply all project cash flows by the present value factor.
4. Find the differences between the PV of cash inflows and cash outflows.

The two broad categories into which capital budgeting decisions fall are screening decisions and preference decisions.

Calderon Kitchen Supplies is planning to invest $210,000 in a new product. The product is expected to generate a net present value of $56,700. The project profitability index is: **0.27**.

Capital budgeting decisions focus on cash inflows and outflows rather than accounting income because:
the present value of a cash flow depends on when it occurs.
accounting net income is based on accruals.

When using the project profitability index to rank competing investments, the higher the project profitability index, the more desirable the project.

Synonyms for the simple rate of return are the **accounting** rate of return and the **unadjusted** rate of return.

Match the following approaches used to compare competing investment projects with the appropriate explanation of the approach.
**Total-cost approach**: All cash flows are included in calculating the net present value for each alternative.
**Incremental-cost approach**: Only those cash flows that differ between the two alternatives are included in the analysis.

Sander Technologies is considering a research project. If successful, the project is expected to lead to sales totaling $60,000 annually. The initial cost of the research is expected to be $331,500. The present value factor used to calculate the internal rate of return is: **5.525**.

When the annual net cash inflow is the same each year, the payback period equals the **investment** required divided by the annual net cash **inflow**.
True or false: When a capital investment decision is being made between two or more alternatives, the project with the shortest payback period is always the most desirable investment. False.

The discount rate can also be referred to as the minimum required rate of return.

Match each capital investment cash flow with the appropriate category.
Salvage value: Inflow
Initial investment: Outflow
Working capital: Inflow and outflow

Working capital is:
treated as a cash outflow when required at the beginning of a project.
treated as a cash inflow when released at the end of a project.

The investment value used in the payback period calculation when new equipment is being considered should be the cost of the new equipment net of any salvage value from the old equipment being replaced.

An investment requires committing funds today with: the expectations of earning a return on those funds in the future.

Match the following categories of capital budgeting decisions with their description.
Screening decisions: Relate to whether a proposed project is acceptable.
Preference decisions: Relate to selecting from among several acceptable alternatives.

A company with taxable cash receipts of $250,000 and a tax rate of 40% will have net after-tax cash inflows of: $150,000.

Calculating the present value of money is referred to as discounting cash flows.

Which of the following statements is false? The net present value method assumes that cash flows are not reinvested.

When making a preference decision, the net present value of one project cannot be directly compared to the net present value of another project unless the initial investments are equal.

Finding the present value of a future cash flow is called discounting.

Which of the following are true regarding the time value of money?
Projects that provide earlier returns are preferable to those that promise later returns.
By collecting a project’s return quickly, the investor has the opportunity to re-invest that money to earn even more.

Which of the following statements are true?
The more frequently interest is compounded, the faster the balance grows.
Compound interest means that the interest is paid on interest.

Select all correct statements regarding net present value:
The net present value method automatically provides for return of the original investment.
A project with a positive NPV will recover the original cost of the investment plus sufficient cash inflows to compensate for tying up funds.
One of the two broad categories of capital budgeting decisions, a **screening** decision, relates to whether a proposed project is acceptable based on a preset criterion.

The basic premise of the payback method is that the more **quickly** the cost of an investment can be recovered, the more desirable the investment is.

In a situation where the capital project will create no additional revenue for the company, the most desirable alternative is the one with the: **least total cost from the present value perspective**.

An investment of $2,000 at 7% compound interest will be worth **$2450** at the end of 3 years.

If $1,000 is invested at 7% interest, the total value of the investment at the end of one year will be **$1070**.

Sandy’s Soda Co. is planning an investment in new cooling equipment that would cost $56,000. The new equipment would save on operating costs over the next 5 years as follows: $21,500 in year 1; $23,100 in year 2; $19,000 in year 3; $13,900 in year 4; and $15,200 in year 5. The payback period for the cooling equipment is: **2.6 years**.

A postaudit is a valuable process because: **actual values can be used to determine if the project is performing as expected**.

If a company’s minimum required rate of return is used as the discount rate, a project with a: **positive net present value will have a rate of return that exceeds the minimum required rate of return.**

**negative net present value is unacceptable.**

Because a depreciation deduction reduces taxable income, it is referred to as a depreciation **tax shield**.

A(n) **annuity** is a series of equal cash flows.

The incremental-cost approach:

**is preferable to the total-cost approach when only two alternatives are being considered.**

**only includes costs and revenues that differ between the alternatives being considered.**

Given an interest rate of 8% compounded annually, $5,000 to be received four years from today is equal to 0 today. **3,675**

Packaging Place is considering a new investment, but is unsure of the intangible benefits it will provide. The net present value exceeding the intangible benefit is negative $380,990. If the present value factor is 6.145, then the minimum intangible benefit per year needed to make the investment acceptable is: **$62,000**.

What assumption underlies net present value analysis?

**All cash flows generated by an investment project are immediately reinvested at a rate of return equal to the discount rate.**

True or false: Capital budgeting involves little or no planning. **False**

When using the simple rate of return, the initial investment should be reduced by the **salvage** value of old equipment.
Place the following steps for finding the internal rate of return (IRR) in the correct order.

1. Calculate the factor needed to determine the internal rate of return.
2. Find the line in the PV of an annuity table of the project years.
3. Trace the line across the table until the factor appear.
4. Trace up the column containing the factor to find the IRR.

Comparing a project’s rate of return to its cost of capital is a **screening** decision.

A company with a tax rate of 30% and a depreciation deduction of $20,000 has a depreciation tax shield of: **$6,000**.

View Perfect is considering an investment in a new line of windows. The project is expected to last 10 years. If the factor of the internal rate of return is 5.889, the internal rate of return is: **11%**.

When using net present value to compare projects, the total cost approach:
- **is the most flexible method available to compare projects.**
- includes all cash inflows and outflows under each alternative.

Which of the following statements are true?
- The cost of capital may be used to screen out undesirable projects.
- When using the internal rate of return method, the cost of capital is used as the hurdle rate.
- When the net present value method is used, the discount rate equals the hurdle rate.

It is important to know the present value of an investment because a dollar: **is worth more today than it will be worth a year from today**.

The internal rate of return and the project profitability index are both tools used when making a **preference** decision concerning multiple acceptable investment projects.

A(n) **annuity** is a series of equal cash flows.

Which of the following are the most common measurements used to rank acceptable investment projects?
- Internal rate of return
- Project profitability index

Working capital is current **assets** minus current **liabilities**.

Which of the following are characteristics of the simple rate of return method for evaluating capital investment proposals?
- The simple rate of return fluctuates from year to year along with fluctuations in revenue and expense.
- The simple rate of return ignores the time value of money.

Calculate the present value of a 10-year, 6% loan with annual payments of $7,500 made at the end of each year. **$55,200**

Which of the following are not typical capital budgeting cash outflows?
- Cost reduction
- Salvage value of old equipment
S&P Enterprises is considering purchasing a new piece of equipment that costs $260,000. It is expected to last 5 years and to have a salvage value of $25,000. The equipment should increase annual cash receipts by $115,000 per year. Cash expenses to operate the equipment should be $20,000. The company’s after-tax cost of capital is 10% and its tax rate is 30%. What is the net present value of this project assuming the company uses straight-line depreciation? $62,108.60