




Question #1 of 25

Question ID: 1463558

If two projects are mutually exclusive, a company:

- A) can accept either project, but not both projects. 
- B) must accept both projects or reject both projects. 
- C) can accept one of the projects, both projects, or neither project. 

Explanation




Mutually exclusive means that out of the set of possible projects, only one project can be selected. Given two mutually exclusive projects, the company can accept one of the projects or reject both projects, but cannot accept both projects.

(Module 31.1, LOS 31.b)

Question #2 of 25

Question ID: 1463553

One of the basic principles of capital allocation is that:

- A) opportunity costs should be excluded from the analysis of a project. 
- B) decisions are based on cash flows. 
- C) projects should be analyzed on a pre-tax basis. 

Explanation

Key principles of the capital allocation process are:

1. Decisions are based on cash flows, not accounting income.
2. Cash flows are based on opportunity costs.
3. The timing of cash flows is important.
4. Cash flows are analyzed on an after-tax basis.
5. Financing costs are reflected in the project's required rate of return.

(Module 31.1, LOS 31.b)

Question #3 of 25

Question ID: 1463560

A company is considering a \$10,000 project that will last 5 years.

- Annual after tax cash flows are expected to be \$3,000
- Cost of capital = 9.7%

What is the project's net present value (NPV)?

A) +\$1,460.



B) -\$1,460.



C) +\$11,460.



Explanation

Calculate the PV of the project cash flows

$$N = 5, PMT = -3,000, FV = 0, I/Y = 9.7, CPT \rightarrow PV = 11,460$$

Calculate the project NPV by subtracting out the initial cash flow

$$NPV = \$11,460 - \$10,000 = \$1,460$$

(Module 31.2, LOS 31.c)

Question #4 of 25

Question ID: 1463561

A firm is reviewing an investment opportunity that requires an initial cash outlay of \$336,875 and promises to return the following irregular payments:

Year 1: \$100,000

Year 2: \$82,000

Year 3: \$76,000

Year 4: \$111,000

Year 5: \$142,000

If the required rate of return for the firm is 8%, what is the net present value of the investment?

A) \$64,582.



B) \$99,860.



C) \$86,133.



Explanation

To determine the net present value of the investment, given the required rate of return, we can discount each cash flow to its present value, sum the present value, and subtract the required investment.




Year	Cash Flow	PV of Cash flow at 8%
0	-336,875.00	-336,875.00
1	100,000.00	92,592.59
2	82,000.00	70,301.78
3	76,000.00	60,331.25
4	111,000.00	81,588.31
5	142,000.00	96,642.81
Net Present Value		64,581.74

(Module 31.2, LOS 31.c)

Question #5 of 25

Question ID: 1463551

Which of the following steps is *least likely* to be a step in the capital allocation process?

- A) Arranging financing for capital projects. 
- B) Conducting a post-audit to identify errors in the forecasting process. 
- C) Forecasting cash flows and analyzing project profitability. 

Explanation

Arranging financing is not one of the administrative steps in the capital budgeting process. The four administrative steps in the capital budgeting process are:

1. Idea generation
2. Analyzing project proposals
3. Creating the firm-wide capital budget
4. Monitoring decisions and conducting a post-audit

(Module 31.1, LOS 31.b)

Question #6 of 25

Question ID: 1463569

Should a company accept a project that has an IRR of 14% and an NPV of \$2.8 million if the cost of capital is 12%?

A) No, based on the NPV and the IRR.



B) Yes, based on the NPV and the IRR.



C) Yes, based only on the NPV.



Explanation

The project should be accepted on the basis of its positive NPV and its IRR, which exceeds the cost of capital.

(Module 31.2, LOS 31.c)

Question #7 of 25

Question ID: 1463571

Garner Corporation is investing \$30 million in new capital equipment. The present value of future after-tax cash flows generated by the equipment is estimated to be \$50 million. Currently, Garner has a stock price of \$28.00 per share with 8 million shares outstanding. Assuming that this project represents new information and is independent of other expectations about the company, what should the effect of the project theoretically be on the firm's stock price?

A) The stock price will increase to \$30.50.



B) The stock price will increase to \$34.25.



C) The stock price will remain unchanged.



Explanation

In theory, a positive NPV project should provide an increase in the value of a firm's shares.

NPV of new capital equipment = \$50 million - \$30 million = \$20 million

Value of company prior to equipment purchase = 8,000,000 × \$28.00 = \$224,000,000

Value of company after new equipment project = \$224 million + \$20 million = \$244 million

Price per share after new equipment project = \$244 million / 8 million = \$30.50

Note that in reality, changes in stock prices result from changes in expectations more than changes in NPV.

(Module 31.3, LOS 31.e)

Question #8 of 25

Question ID: 1463563

Fisher, Inc., is evaluating the benefits of investing in a new industrial printer. The printer will cost \$28,000 and increase after-tax cash flows by \$7,000 during each of the next four years and \$6,000 in each of the two years after that. The internal rate of return (IRR) of the printer project is *closest* to:

A) 11.8%.**B) 11.6%.****C) 12.0%.****Explanation**

$CF_0 = -\$28,000$; $CF_1 = \$7,000$; $F_1 = 4$; $CF_2 = \$6,000$; $F_2 = 2$; CPT \rightarrow IRR = 11.6175%.

(Module 31.2, LOS 31.c)

Question #9 of 25

Question ID: 1463559

Lincoln Coal is planning a new coal mine, which will cost \$430,000 to build. The mine will bring cash inflows of \$200,000 annually over the next seven years. It will then cost \$170,000 to close down the mine in the following year. Assume all cash flows occur at the end of the year. Alternatively, Lincoln Coal may choose to sell the site today. If Lincoln has a 16% required rate of return, the minimum price they should accept for the property is *closest* to:

A) \$326,000.**B) \$310,000.****C) \$318,000.****Explanation**

The key is first identifying this as a NPV problem. The minimum price the company should accept for selling the property is the net present value of the mine if the company built and operated it.

Next, the year of each cash flow must be properly identified; specifically: $CF_0 = -430,000$; $CF_{1-7} = +\$200,000$; $CF_8 = -\$170,000$.

Entering these values into the cash flow worksheet:




$CF_0 = -430,000$; $C01 = 200,000$; $F01 = 7$; $C02 = -170,000$; $F02 = 1$; $I = 16$; CPT NPV = 325,858.76

(Module 31.2, LOS 31.c)

Question #10 of 25

Question ID: 1463550

With respect to capital investments, the greatest amount of detailed analysis is typically required when deciding whether to:

- A) address safety-related concerns. 
- B) replace a functioning machine with a newer model to reduce costs. 
- C) introduce a new product or develop a new market. 

Explanation


Introducing a new product or entering a new market involves sales and expense projections that can be highly uncertain, and therefore require the greatest degree of detailed analysis. Addressing safety or regulatory concerns or replacing old machinery typically involve less uncertainty and do not require the same depth of analysis as developing a new product or entering a new market.



(Module 31.1, LOS 31.a)

Question #11 of 25

Question ID: 1463573

Polington Aircraft Co. just announced a sale of 30 aircraft to Cuba, a project with a net present value of \$10 million. Investors did not anticipate the sale because government approval to sell to Cuba had never before been granted. The share price of Polington should theoretically:

- A) not necessarily change because new contract announcements are made all the time. 

- B) increase by the project NPV divided by the number of common shares outstanding. 
- C) increase by the NPV \times (1 – corporate tax rate) divided by the number of common shares outstanding. 

Explanation




Since the sale was not anticipated by the market, the share price should rise by the NPV of the project per common share. NPV is already calculated using after-tax cash flows.

(Module 31.3, LOS 31.e)

Question #12 of 25

Question ID: 1463552

Financing costs for a capital project are:

- A) subtracted from estimates of a project's future cash flows. 
- B) subtracted from the net present value of a project. 
- C) captured in the project's required rate of return. 

Explanation

Financing costs are reflected in a project's required rate of return. Project specific financing costs should not be included as project cash flows. The firm's overall weighted average cost of capital, adjusted for project risk, should be used to discount expected project cash flows.

(Module 31.1, LOS 31.b)

Question #13 of 25

Question ID: 1463570

An investment is purchased at a cost of \$775,000 and returns \$300,000 at the end of years 2 and 3. At the end of year 4 the investment receives a final payment of \$400,000. The IRR of this investment is *closest* to:

- A) 8.65%. 
- B) 9.45%. 
- C) 13.20%. 

Explanation

$Cf_0 = -775,000$, $C_1 = 0$, $F_1 = 1$, $C_2 = 300,000$, $F_2 = 2$, $C_3 = 400,000$, $F_3 = 1$; IRR = 8.6534.

(Module 31.2, LOS 31.c)

Question #14 of 25

Question ID: 1463554

The CFO of Axis Manufacturing is evaluating the introduction of a new product. The costs of a recently completed marketing study for the new product and the possible increase in the sales of a related product made by Axis are best described (respectively) as:

- A) opportunity cost; externality.
- B) externality; cannibalization.
- C) sunk cost; externality.



Explanation

The study is a sunk cost, and the possible increase in sales of a related product is an example of a positive externality.

(Module 31.1, LOS 31.b)

Question #15 of 25

Question ID: 1463565

If the calculated net present value (NPV) is negative, which of the following must be correct. The discount rate used is:

- A) greater than the internal rate of return (IRR).
- B) less than the internal rate of return (IRR).
- C) equal to the internal rate of return (IRR).



Explanation

When the NPV = 0, this means the discount rate used is equal to the IRR. If a discount rate is used that is higher than the IRR, the NPV will be negative. Conversely, if a discount rate is used that is lower than the IRR, the NPV will be positive.

(Module 31.2, LOS 31.c)

Question #16 of 25

Question ID: 1463567

An analyst has gathered the following data about a company with a 12% cost of capital:

	Project P	Project Q
Cost	\$15,000	\$25,000
Life	5 years	5 years
Cash inflows	\$5,000/year	\$7,500/year

If the projects are independent, what should the company do?

- A) Accept both Project P and Project Q.
- B) Accept Project P and reject Project Q.
- C) Reject both Project P and Project Q.

**Explanation**

Project P: $N = 5$; $PMT = 5,000$; $FV = 0$; $I/Y = 12$; $CPT \rightarrow PV = 18,024$; NPV for Project A = $18,024 - 15,000 = 3,024$.

Project Q: $N = 5$; $PMT = 7,500$; $FV = 0$; $I/Y = 12$; $CPT \rightarrow PV = 27,036$; NPV for Project B = $27,036 - 25,000 = 2,036$.

For independent projects the NPV decision rule is to accept all projects with a positive NPV. Therefore, accept both projects.

(Module 31.2, LOS 31.c)

Question #17 of 25

Question ID: 1463555

The effects that the acceptance of a project may have on other firm cash flows are *best* described as:

- A) pure plays.
- B) externalities.
- C) opportunity costs.

**Explanation**

Externalities refer to the effects that the acceptance of a project may have on other firm cash flows. Cannibalization is one example of an externality.

(Module 31.1, LOS 31.b)

Question #18 of 25

Question ID: 1463557

Which of the following is *least* relevant in determining project cash flow for a capital investment?

A) Tax impacts.



B) Sunk costs.



C) Opportunity costs.



Explanation

Sunk costs are not to be included in investment analysis. Opportunity costs and the project's impact on taxes are relevant variables in determining project cash flow for a capital investment. (Module 31.1, LOS 31.b)

Question #19 of 25

Question ID: 1463566

As the director of capital budgeting for Denver Corporation, an analyst is evaluating two mutually exclusive projects with the following net cash flows:

Year	Project X	Project Z
0	-\$100,000	-\$100,000
1	\$50,000	\$10,000
2	\$40,000	\$30,000
3	\$30,000	\$40,000
4	\$10,000	\$60,000

If Denver's cost of capital is 15%, which project should be chosen?

A) Project X, since it has the higher IRR.



B) Project X, since it has the higher net present value (NPV).



C) Neither project.



Explanation

NPV for Project X = $-100,000 + 50,000 / (1.15)^1 + 40,000 / (1.15)^2 + 30,000 / (1.15)^3 + 10,000 / (1.15)^4$

$$= -100,000 + 43,478 + 30,246 + 19,725 + 5,718 = -833$$

NPV for Project Z = $-100,000 + 10,000 / (1.15)^1 + 30,000 / (1.15)^2 + 40,000 / (1.15)^3 + 60,000 / (1.15)^4$

$$= -100,000 + 8,696 + 22,684 + 26,301 + 34,305 = -8,014$$

Reject both projects because neither has a positive NPV.

(Module 31.2, LOS 31.c)

Question #20 of 25

Question ID: 1463549

Which of the following types of capital investments are *most likely* to generate little to no revenue?

A) Going concern projects.



B) Regulatory projects.



C) New product or market development.



Explanation

Mandatory regulatory or environmental projects may be required by a governmental agency or insurance company and typically involve safety-related or environmental concerns. The projects typically generate little to no revenue, but they accompany other new revenue producing projects and are accepted by the company in order to continue operating.

(Module 31.1, LOS 31.a)

Question #21 of 25

Question ID: 1463564

The estimated annual after-tax cash flows of a proposed investment are shown below:

Year 1: \$10,000

Year 2: \$15,000

Year 3: \$18,000

After-tax cash flow from sale of investment at the end of year 3 is \$120,000

The initial cost of the investment is \$100,000, and the required rate of return is 12%. The net present value (NPV) of the project is *closest* to:

A) \$19,113.



B) \$63,000.



C) -\$66,301.



Explanation

$$10,000 / 1.12 = 8,929$$

$$15,000 / (1.12)^2 = 11,958$$

$$138,000 / (1.12)^3 = 98,226$$

$$\text{NPV} = 8,929 + 11,958 + 98,226 - 100,000 = \$19,113$$

Alternatively: CFO = -100,000; CF1 = 10,000; CF2 = 15,000; CF3 = 138,000; I = 12; CPT → NPV = \$19,112.

(Module 31.2, LOS 31.c)

Question #22 of 25

Question ID: 1463556


Johnson's Jar Lids is deciding whether to begin producing jars. Johnson's pays a consultant \$50,000 for market research that concludes Johnson's sales of jar lids will increase by 5% if it also produces jars. In choosing the cash flows to include when evaluating a project to begin producing jars, Johnson's should:

A) exclude the cost of the market research and include the effect on the sales of jar lids.



B) include both the cost of the market research and the effect on the sales of jar lids.



- C) include the cost of the market research and exclude the effect on the sales of jar lids. 

Explanation

Sunk costs should be excluded from cash flows, as they are costs that cannot be avoided even if the project is not undertaken. Externalities, such as positive or negative effects of accepting a project on sales of the company's existing products, should be included in the cash flows. (Module 31.1, LOS 31.b)

Question #23 of 25




Question ID: 1463568

Jack Smith, CFA, is analyzing independent investment projects X and Y. Smith has calculated the net present value (NPV) and internal rate of return (IRR) for each project:

Project X: NPV = \$250; IRR = 15%

Project Y: NPV = \$5,000; IRR = 8%

Smith should make which of the following recommendations concerning the two projects?

- A) Accept Project X only. 
- B) Accept Project Y only. 
- C) Accept both projects. 

Explanation




The projects are independent, meaning that either one or both projects may be chosen. Both projects have positive NPVs, therefore both projects add to shareholder wealth and both projects should be accepted.

(Module 31.2, LOS 31.c)

Question #24 of 25

Question ID: 1463572

The effect of a company announcement that they have begun a project with a current cost of \$10 million that will generate future cash flows with a present value of \$20 million is *most likely* to:

- A) increase value of the firm's common shares by \$10 million. 
- B) increase the value of the firm's common shares by \$20 million. 
- C) only affect value of the firm's common shares if the project was unexpected. 

Explanation

Stock prices reflect investor expectations for future investment and growth. A new positive-NPV project will increase stock price only if it was not previously anticipated by investors.

(Module 31.3, LOS 31.e)

Question #25 of 25

Question ID: 1463562

The financial manager at Genesis Company is looking into the purchase of an apartment complex for \$550,000. Net after-tax cash flows are expected to be \$65,000 for each of the next five years, then drop to \$50,000 for four years. Genesis' required rate of return is 9% on projects of this nature. After nine years, Genesis Company expects to sell the property for after-tax proceeds of \$300,000. What is the respective internal rate of return on this project?

A) 7.01%.



B) 13.99%.



C) 6.66%.



Explanation

$CF_0 = -\$550,000$; $CF_1 = \$65,000$; $F_1 = 5$; $CF_2 = \$50,000$; $F_2 = 3$; $CF_3 = \$350,000$; $F_3 = 1$. CPT IRR = 7.0152. Note that the cash flows in year 9 have to be netted to calculate the IRR correctly.

(Module 31.2, LOS 31.c)