



**Free Questions for CFA-Level-II by vceexamstest**

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# Question 1

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## Question Type: MultipleChoice

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Engineered Packaging Inc. (EPI) is a manufacturer of industrial and consumer packaging products. The company's products include composite and plastic rigid packaging, flexible packaging, as well as metal and plastic ends and closures. In January 2008, EPI entered into a joint venture with BMI Enterprises. EPI contributed ownership of five plants, while BMI contributed a new manufacturing technology. The joint venture is known as EP/BM LLC . EPI owns 50% of EP/BM LLC and uses the equity method to account for its investment. The following information for 2008 is provided:

Had EPI used the proportionate consolidation method instead of the equity method to account for its joint venture investment, EPI's long-term debt-to-equity ratio would have been:

### Options:

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A- higher.

B- lower.

C- the same.

### Answer:

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A

### **Explanation:**

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Long-term debt is higher under the proportionate consolidation method since the prorata share of the joint ventures debt is reported by EPI. Under the equity method, none of the joint venture's debt is reported by EPI. Equity is the same under both methods. Thus, long-term debt-to-equity is higher under proportionate consolidation (higher numerator). (Study Session 5, LOS 21.a)

## **Question 2**

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### **Question Type: MultipleChoice**

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Engineered Packaging Inc. (EPI) is a manufacturer of industrial and consumer packaging products. The company's products include composite and plastic rigid packaging, flexible packaging, as well as metal and plastic ends and closures. In January 2008, EPI entered into a joint venture with BMI Enterprises. EPI contributed ownership of five plants, while BMI contributed a new manufacturing technology. The joint venture is known as EP/BM LLC . EPI owns 50% of EP/BM LLC and uses the equity method to account for its investment. The following information for 2008 is provided:

<i>In Millions, Year End 2008</i>	<i>EPI</i>	<i>EP/BM LLC</i>
Revenue	\$3,115	\$421
Cost of goods sold	\$2,580	\$295
SG&A	\$316	\$50
Interest expense	\$47	\$8
Equity in earnings of EP/BM	\$22	
Pretax income	\$194	\$68
Income tax	\$60	\$24
Net income	\$134	\$44

<i>In Millions, December 31, 2008</i>	<i>EPI</i>	<i>EP/BM LLC</i>
<b>Assets</b>		
Cash	\$118	\$13
Accounts receivable	\$390	\$50
Inventory	\$314	\$41
Property	\$1,007	\$131
Investment	\$38	
Total	\$1,867	\$235

<i>Liabilities and Equity</i>		
Accounts payable	\$274	\$35
Long-term debt	\$719	\$125

Based on the proportionate consolidation method, calculate EPI's interest coverage ratio for 2G08 (use the financial information provided),

**Options:**

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A- 3.6.

B- 4.0.

C- 5.0.

**Answer:**

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C

**Explanation:**

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Interest coverage = EBIT / interest expense;  $257 / 51 = 5.0$ . (Study Session 5 LOS 21.c)

## Question 3

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**Question Type:** MultipleChoice

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Engineered Packaging Inc. (EPI) is a manufacturer of industrial and consumer packaging products. The company's products include composite and plastic rigid packaging, flexible packaging, as well as metal and plastic ends and closures. In January 2008, EPI entered into a joint venture with BMI Enterprises. EPI contributed ownership of five plants, while BMI contributed a new manufacturing technology. The joint venture is known as EP/BM LLC . EPI owns 50% of EP/BM LLC and uses the equity method to account for its investment. The following information for 2008 is provided:

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<b>Assets</b>		
Cash	\$118	\$13
Accounts receivable	\$390	\$50
Inventory	\$314	\$41
Property	\$1,007	\$131
Investment	\$38	
Total	\$1,867	\$235

<i>Liabilities and Equity</i>		
Accounts payable	\$274	\$35
Long-term debt	\$719	\$125

Based on the proportionate consolidation method, calculate EPI's current ratio for 2008 (use the financial information provided).

**Options:**

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**A-** 1.8.

**B-** 2.6.

**C-** 3.0.

**Answer:**

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C

**Explanation:**

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Current ratio = current assets / current liabilities;  $(125 + 415 + 335) / 292 = 3.0$ . (Study Session 5. LOS 21.c)

## Question 4

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**Question Type:** MultipleChoice

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Engineered Packaging Inc. (EPI) is a manufacturer of industrial and consumer packaging products. The company's products include composite and plastic rigid packaging, flexible packaging, as well as metal and plastic ends and closures. In January 2008, EPI entered into a joint venture with BMI Enterprises. EPI contributed ownership of five plants, while BMI contributed a new manufacturing technology. The joint venture is known as EP/BM LLC . EPI owns 50% of EP/BM LLC and uses the equity method to account for its investment. The following information for 2008 is provided:

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Investment	\$38	
Total	\$1,867	\$235

<i>Liabilities and Equity</i>		
Accounts payable	\$274	\$35
Long-term debt	\$719	\$125

Had EPI used the proportionate consolidation method instead of the equity method to account for its joint venture investment, which of the following statements is the most correct?

**Options:**

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- A- Net income would have been the same and total assets would have been lower.
- B- Equity would have been the same and total liabilities would have been lower.
- C- Revenue would have been higher and expenses would have been higher.

**Answer:**

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C

**Explanation:**

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Revenues and expenses are higher under proportionate consolidation. None of the joint ventures revenues and expenses are reported under the equity method. Rather, the prorata share of the joint venture's earnings are reported under the equity method. Net income is the same under both methods. Under proportionate consolidation, total assets and total liabilities include the pro-rata ownership of the separate assets and liabilities of the joint venture. Thus, total assets and total liabilities are higher under proportionate consolidation.

Note: The investment in EP/BM LLC is not included as an asset under proportionate consolidation. (Study Session 5, LOS 21.a)

## Question 5

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### Question Type: MultipleChoice

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Cummings Enterprises, Inc. (CEI), is a U.S. conglomerate that operates in a variety of markets. One of CEI's divisions manufactures small fiberglass products, such as bird baths and outdoor storage lockers. CEI is currently considering the expansion of its fiberglass product line to include booms and buckets for aerial lift trucks (often called cherry pickers) which are used for applications such as high voltage power line maintenance. The addition of this new product line is expected to increase CEI's sales by \$750,000 per year.

Cal Holbrook, CEI's manager of fiberglass operations, is deciding whether to purchase a robotic system to produce cherry picker booms and buckets. The price of the robotic system will be \$700,000, plus an additional \$100,000 for shipping, site preparation and installation. The new equipment will require a \$50,000 increase in inventory and a \$20,000 increase in accounts payable. The company uses MACRS to calculate depreciation for tax purposes and the straight-line method for financial reporting. The project has an expected life of four years, at which time the robot is expected to be sold for \$75,000. The project will be funded with the debt/equity mix reflected by the company's current capital structure. CEI's pretax cost of new debt is 7%. Assume a WACC of 8%. Some of the relevant end-of-year cash flows for the robotic project are presented in Exhibit 1.

**Exhibit 1: Relevant Cash Flows for Robotics Project**

	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>
Sales	\$750,000	\$750,000	\$750,000	\$750,000
Variable costs	\$225,000	\$225,000	\$225,000	\$225,000
Fixed expense	\$75,000	\$75,000	\$75,000	\$75,000
Depreciation	\$264,000	\$360,000	\$120,000	\$56,000
Operating income (EBIT)	\$186,000	\$90,000	\$330,000	\$394,000
<b>Total after-tax cash flow</b>	<b>\$375,600</b>	<b>\$414,000</b>	<b>\$318,000</b>	<b>?</b>

Holbrook calculates the NPV of the robotic project and presents his findings to his supervisor, Geoffrey Mans. After reviewing the report, Mans makes the following recommendations:

- 1 "You forgot to include the \$ 100,000 we have spent so far on consultants and project engineers and who knows what else to evaluate the project's feasibility. Rerun the numbers including that amount and get the revised calculations to me this afternoon."
2. "Rerun the analysis assuming straight-line depreciation for tax purposes. The NPV will be higher, and we'll be more likely to get the project funded."

Cummings has two other projects under consideration that would affect the production of storage lockers. Project 1 relates to changing the production process, and Project 2 relates to expanding the distribution facility. Holbrook estimates the NPV of the expected cash flows for Project 1 at negative \$7 million. An additional investment of \$3 million would allow management to more rapidly adjust to the demand for a certain type of locker. The value of this flexibility is estimated at \$9 million. He estimates that the NPV of the expected cash

flows for Project 2 at \$3 million. An expansion option would require an additional investment of \$2 million. At this time, Cummings does not have any capital rationing restrictions.

Holbrook emails the lead analyst for the budgeting group and indicates that he cannot make a decision on Project 2 without knowing the value the expansion option will provide.

Holbrook calls a capital budgeting meeting with CEI's production manager and quality control manager. Holbrook opens the meeting by stating: "I think we should accept this project based solely on the fact that it provides great operating margins. Nevertheless, I think we should conduct net present value (NPV) analysis to confirm my opinion." Holbrook then receives the following comments:

Comment 1:

It is important that interest is included in the discounted cash flows used with NPV analysis because interest is a real and very significant expense.

Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

Are the comments made by the CEFs production and quality assurance managers correct or incorrect?

### **Options:**

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**A-** Both comments are correct.

**B-** Only one of the comments is correct.

**C-** Both comments are incorrect.

**Answer:**

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C

**Explanation:**

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Comment 1 is incorrect. Interest should not be included in a project's cash flows when conducting NPV analysis because it is a financing cost that is reflected in the discount rate use to compute NPV.

Comment 2 is incorrect. In theory, when discounted at the WACC, the present value of the economic profits from a project equals the NPV of the project. For a given period, economic profit = NOPAT - SWACC, where NOPAT is net operating profit after taxes and \$WACC is the dollar cost of the capital used during the period. Economic profit reflects the income earned by all capital providers. (Study Session 8, LOS 27.a,i)

## Question 6

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Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

The economic income for year 3 for the robotics project from Exhibit 1 is closest to:

**Options:**

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A- \$19,400.

B- \$48,700.

C- \$49,400.

**Answer:**

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B

**Explanation:**

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Economic income = cash flow - economic depreciation

Economic depreciation = beginning market value - ending market value

Market value at time t = present value of all remaining cash flows discounted at the WACC

$$\text{Year 3 beginning market value} = \frac{CF_3}{(1+WACC)^1} + \frac{CF_4}{(1+WACC)^2}$$

$$\frac{\$318,000}{(1.08)^1} + \frac{\$367,400}{(1.08)^2} = \$294,444 + \$314,986 = \$609,430$$

$$\text{Year 3 ending market value} = \frac{CF_4}{(1+WACC)^2} = \frac{\$367,400}{(1.08)^2} = \$340,185$$

Year 3 after-tax operating cash flow (given) = \$318,000

Year 3 economic depreciation = \$609,430 - \$340,185 = \$269,245

Year 3 economic income = \$318,000 - \$269,245 = \$48,755

(Study Session 8, LOS 27.h)

## Question 7

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**Question Type:** MultipleChoice

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Holbrook calculates the NPV of the robotic project and presents his findings to his supervisor, Geoffrey Mans. After reviewing the report, Mans makes the following recommendations:

1 "You forgot to include the \$ 100,000 we have spent so far on consultants and project engineers and who knows what else to evaluate the project's feasibility. Rerun the numbers including that amount and get the revised calculations to me this afternoon."

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Holbrook emails the lead analyst for the budgeting group and indicates that he cannot make a decision on Project 2 without knowing the value the expansion option will provide.

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Comment 1:

It is important that interest is included in the discounted cash flows used with NPV analysis because interest is a real and very significant expense.

Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

Which of the following choices is closest to the overall NPV for Project 1, and is Holbrook correct to wait for more information before deciding on Project 2?

### Options:

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- A- The overall NPV is -\$1 million, and Holbrook is correct.
- B- The overall NPV is -\$1 million, and Holbrook is incorrect.
- C- The overall NPV is \$13 million, and Holbrook is incorrect.

### Answer:

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B

### Explanation:

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The overall NPV of Project 1 = project NPV - option cost + option value

$$\text{overall NPV} = -\$7 \text{ million} - \$3 \text{ million} + \$9 \text{ million} = -\$1 \text{ million}$$

Without the option, the NPV of the production facility is negative, and the real option does not add enough value to make the overall project profitable.

Holbrook is incorrect that he needs to wait for more information to make the decision on Project 2. If the NPV of the project without the option is positive, the analyst knows that the project with the option must be even more valuable, and determining a specific value for the option is unnecessary. A real option adds value to a project, even if it is difficult to determine the monetary amount of that value. (Study Session 8, LOS 27.f)

## Question 8

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**Question Type:** MultipleChoice

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Comment 1:

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Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

For this question only, assume that the investment in net working capital of \$30,000 at the project inception is an inflow and that the amount nets to zero with the outflow that will occur at the end of the project. However, Holbrook does not include a cash flow for net working capital at the beginning or the end of the project. Assuming he correctly analyzes all the other components of the project, has Holbrook correctly estimated the project's net present value?

**Options:**

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A- Yes.

B- No, he underestimated the project's NPV by approximately \$7,950.

C- No, he underestimated the project's NPV by approximately \$2,222.

### Answer:

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B

### Explanation:

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Explanation: By ignoring the initial \$30,000 cash inflow (recall that you are asked to assume it is an inflow), he has underestimated project NPV by \$30,000. By ignoring the terminal cash outflow of \$30,000, he has overestimated the project NPV by  $\frac{\$30,000}{1.084^4} = \$22,050$

The net effect is to underestimate NPV by  $\$30,000 - 22,050 = \$7,950$ .

(Study Session 8, LOS 27.a)

## Question 9

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Question Type: MultipleChoice

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- 1 "You forgot to include the \$ 100,000 we have spent so far on consultants and project engineers and who knows what else to evaluate the project's feasibility. Rerun the numbers including that amount and get the revised calculations to me this afternoon."
2. "Rerun the analysis assuming straight-line depreciation for tax purposes. The NPV will be higher, and we'll be more likely to get the project funded."

Cummings has two other projects under consideration that would affect the production of storage lockers. Project 1 relates to changing the production process, and Project 2 relates to expanding the distribution facility. Holbrook estimates the NPV of the expected cash flows for Project 1 at negative \$7 million. An additional investment of \$3 million would allow management to more rapidly adjust to the demand for a certain type of locker. The value of this flexibility is estimated at \$9 million. He estimates that the NPV of the expected cash flows for Project 2 at \$3 million. An expansion option would require an additional investment of \$2 million. At this time, Cummings does not have any capital rationing restrictions.

Holbrook emails the lead analyst for the budgeting group and indicates that he cannot make a decision on Project 2 without knowing the value the expansion option will provide.

Holbrook calls a capital budgeting meeting with CEI's production manager and quality control manager. Holbrook opens the meeting by stating: "I think we should accept this project based solely on the fact that it provides great operating margins. Nevertheless, I think we should conduct net present value (NPV) analysis to confirm my opinion." Holbrook then receives the following comments:

Comment 1:

It is important that interest is included in the discounted cash flows used with NPV analysis because interest is a real and very significant expense.

Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

Are Mans' recommendations regarding the robotic project correct or incorrect?

**Options:**

---

- A- Both recommendations are correct.
- B- Only one of the recommendations is correct.
- C- Both recommendations are incorrect.

**Answer:**

---

C

**Explanation:**

---

Both recommendations are incorrect. The \$100,000 is a sunk cost and is thus not a relevant cash flow. Using straight-line depreciation will reduce the present value of the depreciation tax shield and reduce the NPV. (Study Session 8, LOS 27.a)

## Question 10

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### Question Type: MultipleChoice

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Cummings Enterprises, Inc. (CEI), is a U.S. conglomerate that operates in a variety of markets. One of CEI's divisions manufactures small fiberglass products, such as bird baths and outdoor storage lockers. CEI is currently considering the expansion of its fiberglass product line to include booms and buckets for aerial lift trucks (often called cherry pickers) which are used for applications such as high voltage power line maintenance. The addition of this new product line is expected to increase CEI's sales by \$750,000 per year.

Cal Holbrook, CEI's manager of fiberglass operations, is deciding whether to purchase a robotic system to produce cherry picker booms and buckets. The price of the robotic system will be \$700,000, plus an additional \$100,000 for shipping, site preparation and installation. The new equipment will require a \$50,000 increase in inventory and a \$20,000 increase in accounts payable. The company uses MACRS to calculate depreciation for tax purposes and the straight-line method for financial reporting. The project has an expected life of four years, at which time the robot is expected to be sold for \$75,000. The project will be funded with the debt/equity mix reflected by the company's current capital structure. CEI's pretax cost of new debt is 7%. Assume a WACC of 8%. Some of the relevant end-of-year cash flows for the robotic project are presented in Exhibit 1.

**Exhibit 1: Relevant Cash Flows for Robotics Project**

	<i>Year 1</i>	<i>Year 2</i>	<i>Year 3</i>	<i>Year 4</i>
Sales	\$750,000	\$750,000	\$750,000	\$750,000
Variable costs	\$225,000	\$225,000	\$225,000	\$225,000
Fixed expense	\$75,000	\$75,000	\$75,000	\$75,000
Depreciation	\$264,000	\$360,000	\$120,000	\$56,000
Operating income (EBIT)	\$186,000	\$90,000	\$330,000	\$394,000
<b>Total after-tax cash flow</b>	<b>\$375,600</b>	<b>\$414,000</b>	<b>\$318,000</b>	<b>?</b>

Holbrook calculates the NPV of the robotic project and presents his findings to his supervisor, Geoffrey Mans. After reviewing the report, Mans makes the following recommendations:

- 1 "You forgot to include the \$ 100,000 we have spent so far on consultants and project engineers and who knows what else to evaluate the project's feasibility. Rerun the numbers including that amount and get the revised calculations to me this afternoon."
2. "Rerun the analysis assuming straight-line depreciation for tax purposes. The NPV will be higher, and we'll be more likely to get the project funded."

Cummings has two other projects under consideration that would affect the production of storage lockers. Project 1 relates to changing the production process, and Project 2 relates to expanding the distribution facility. Holbrook estimates the NPV of the expected cash flows for Project 1 at negative \$7 million. An additional investment of \$3 million would allow management to more rapidly adjust to the demand for a certain type of locker. The value of this flexibility is estimated at \$9 million. He estimates that the NPV of the expected cash

flows for Project 2 at \$3 million. An expansion option would require an additional investment of \$2 million. At this time, Cummings does not have any capital rationing restrictions.

Holbrook emails the lead analyst for the budgeting group and indicates that he cannot make a decision on Project 2 without knowing the value the expansion option will provide.

Holbrook calls a capital budgeting meeting with CEI's production manager and quality control manager. Holbrook opens the meeting by stating: "I think we should accept this project based solely on the fact that it provides great operating margins. Nevertheless, I think we should conduct net present value (NPV) analysis to confirm my opinion." Holbrook then receives the following comments:

Comment 1:

It is important that interest is included in the discounted cash flows used with NPV analysis because interest is a real and very significant expense.

Comment 2:

If applied correctly, the NPV of this project will be higher if we discount economic profits instead of net after-tax operating cash flows in our analysis. I suggest we calculate economic profit as net operating profit after tax minus the dollar cost of capital.

Which of the following choices is closest to the Year 4 total cash flow for the robotics project in Exhibit 1 ?

### **Options:**

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**A-** \$292,400.



**B-** \$345,400.

**C-** \$367,400.

**Answer:**

---

A

**Explanation:**

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The first step is to determine the tax rate from Exhibit 1.

Net income = (after tax cash flow - depreciation), so net income  
= (\$375,600 - \$264,000) = \$111,600.

Net income = EBIT - taxes, so taxes = EBIT - net income  
= (\$ 186,000 - \$ 111,600) = \$74,400

tax rate = taxes / EBIT = (\$74,400 / 186,000) = 0.4000 - 40%

Initial investment outlay

= purchase price + increase in net working capital  
+ shipping and installation costs  
= \$700,000 + (\$50,000 - \$20,000) + \$100,000 = \$830,000

Terminal year after-tax non-operating cash flow (TNOCF)

=  $SaI_T + NWC_{Inv} - T(SaI_T - B_T)$   
= 75,000 + 30,000 - 0.4(75,000 - 0)  
= 75,000

After-tax operating cash flow (year 4)

=  $(S-C)(1-T) + DT$   
= (\$750,000 - \$225,000 - \$75,000)(1 - 0.4) + (0.4)(\$56,000) = \$292,400

The book value at the end of year 4 is \$0 because total depreciation over the four years was \$800,000.

total CF (year 4) = \$292,400 + \$75,000 = \$367,400

(Study Session 8, LOS 27.a)

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