

Answer of Problem #17

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2026

Problem Statement 17

During 2021, Raines Umbrella Corp. had sales of \$865,000. Cost of goods sold, administrative and selling expenses, and depreciation expenses were \$535,000, \$125,000, and \$170,000, respectively. In addition, the company had an interest expense of \$90,000 and a tax rate of 25 percent. (Ignore any tax loss carryforward provisions and assume interest expense is fully deductible.)

- a. What is the company's net income for 2021?
 - b. What is its operating cash flow?
 - c. Explain your results in parts (a) and (b).
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1. Profit and Loss Statements

Case 1: Without Tax Loss Carryforward

Description	Amount (\$)
Sales	865,000
COGS	(535,000)
Gross Profit	330,000
Adm & Sell Expenses	(125,000)
Depreciation Expense	(170,000)
EBIT	35,000
Interest Expense	(90,000)
EBT	(55,000)
Taxes (0%)	0
Net Profit	(55,000)

Case 2: With Tax Loss Carryforward

Description	Amount (\$)
Sales	865,000
COGS	(535,000)
Gross Profit	330,000
Adm & Sell Expenses	(125,000)
Depreciation Expense	(170,000)
EBIT	35,000
Interest Expense	(90,000)
EBT	(55,000)
Taxes (25%)	(13,750)
Net Profit	(41,250)

2. Operating Cash Flow (OCF) Calculations

Formula I: EBIT Method

The formula for OCF is defined as:

$$OCF = EBIT + \text{Depreciation} - \text{Taxes}$$

Without Tax Loss Carryforward:

$$OCF = 35,000 + 170,000 - 0 = 205,000$$

With Tax Loss Carryforward:

$$OCF = 35,000 + 170,000 - (-13,750) = 218,750$$

Formula II: Tax Shield Method

The alternative approach accounts for the depreciation and interest tax shields:

$$OCF = (\text{Sales} - \text{Costs})(1 - T) + (\text{Depreciation} \times T) + (\text{Interest} \times T)$$

Component	Value (\$)
Sales	865,000
Cost and Expenses	660,000
(Sales - Costs) \times (1 - T)	153,750
Depreciation	170,000
Depreciation Tax Shield (Depr \times T)	42,500
Interest	90,000
Interest Tax Shield (Int \times T)	22,500
Total OCF	218,750

3. Conclusion

The analysis shows that when we account for negative tax (the tax credit from the loss), both Formula I and Formula II yield the same OCF result of \$218,750. This demonstrates that despite a net loss on the income statement, the non-cash nature of depreciation and the tax deductibility of interest result in an increase of operating cash flow for the period.