

37.3 A company with a tax rate of 30% makes a \$50,000 one time purchase that drives \$8,000 of annual revenue and carries \$1200 of annual maintenance costs. The salvage value after 10 years is \$5000. What is the present value of the investment over 10 years at a 6% interest rate?

- A. -\$12,200
- B. -\$6,000
- C. \$11,700
- D. \$52,800

Draw a cash flow diagram or make a list of cash flows.

In Year 0, there is an initial payment of \$50K (negative).

In Years 1-10, there is a net profit before tax of $\$8000 - \$1200 = \$6800$ and a net profit after tax of $\$6800(1 - 0.3) = \4760 .

In Year 10, there is also a future payment for the salvage value of \$5K in addition to the after-tax profit.

Note the tax rate is applied only to the annual profits and not to the initial cost or salvage value, and there is no reference to depreciation in the problem statement.

Write an expression for the present value. Use the $i = 6\%$ Factor Table to retrieve the cash flow factors.

$$PV = -\$50,000 + \$4760 (P/A, 6\%, 10) + \$5000 (P/F, 6\%, 10)$$

$$PV = -\$50,000 + \$4760 (7.3601) + \$5000 (0.5584) = -\$12,174$$

Answer A