

Assignment 8

EECE/CPEN 481

Instructor: Jeff Carmichael

Selected problems from the textbook (Engineering Economic Analysis: Fourth Canadian Edition). Some have been revised significantly from the original textbook question, to clarify or simplify the problem: answer the question as listed here.

Problems are drawn mainly from material in Chapters 2, 9, and 11.

1. Problem 1 (1 pt)
2. Problem 2 (1 pt)
3. Problem 3 (2 pts)
4. Problem 4 (2 pts)

1. Problem 1

A firm exists that makes only one product, using one kind of machine. Categorize each of the following costs as direct or indirect. Assume that a traditional costing system is in effect. Justify your selection, if the categorization you assign it to would depend on the assumptions made.

Cost of materials (inputs to production)
Interest payments
Machine depreciation
Product handling and shipping costs
Machine operator wages
Utility costs
Support (administrative) staff salaries

Cost of marketing the product
Cost of storing the product before sale
Insurance costs
Engineering drawings
Machine operator overtime expenses
Cost of tooling and fixtures

2. Problem 2

Assume you have \$2,000 available for investment for a five-year period. You wish to invest the money. There are obviously many alternatives available. You should be willing to assume a modest amount of risk of loss of some or all of the money if necessary, but not a great amount of risk (so, no investments in poker games or at horse races). Describe three ways you might consider investing the money, and what rate you think you might be able to earn. What is your minimum attractive rate of return? Explain why.

3. Problem 3

Muddy Meadows Earthmoving can purchase a bulldozer for \$400,000. After seven years of use, the bulldozer is expected to have a salvage value of \$75,000. What will the depreciation value in year 5 be for the bulldozer, assuming:

- (a) it is classified as earthmoving equipment, which is CCA Class 38?
- (b) straight line depreciation?
- (c) sum-of-the-years'-digits depreciation?
- (d) 150% declining-balance depreciation?

Round your answers to the nearest dollar.

4. Problem 4

A \$600,000 asset has been depreciated with the straight-line method over an eight-year life. The estimated salvage value was \$80,000. At the end of the sixth year, the asset was sold for \$240,000.

- (a) What is the estimated book value after 6 years, based on depreciation? What is the calculated difference between book value and sold market value for the asset? (Round both answers to the nearest dollar.)
- (b) Which of the following occurred: Recaptured Depreciation, Loss on Disposal, or Capital Gain?
- (c) If this method of depreciation were allowed under tax law, and a tax rate of 33% applied, how much tax would be owed or credited to the firm due to the sale of the asset?