

Name:

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ISE 307, Term 153
ENGINEERING ECONOMIC ANALYSIS

Quiz# 5

Date: Sunday, August 28, 2016

Q1. Peabody Corporation has the following base-case estimates for its new small engine assembly project:

- Price per unit= \$400 increasing at a rate of 10%
- Variable costs = \$150 per unit increasing at a rate of 8%
- Fixed costs = \$1 million increasing by 100,000 each year
- Demand = 10,000 units per year increasing at a 5% rate
- Capital investment = \$5 million at year 0
- Product life = 5 years
- Salvage value = \$1,000,000
- Depreciation method: Seven-year MACRS
- Tax rate= 35%
- MARR = 15%

- a) Calculation the depreciation for each year over the product life, the book value at the end of year 5 and the Tax Gains or Losses.
- b) Develop the project's cash flows over its project life.
- c) Determine the net present worth (NPW) of the project at the company's MARR of 15%. Is this project acceptable?

MACRS Depreciation Schedule with Half Year Convention for 7-Year MACRS property

1	2	3	4	5	6	7	8
14.29	24.49	17.49	12.49	8.93	8.92	8.93	4.46

Income Statement						
	0	1	2	3	4	5
Revenues						
Unit Price						
Demand(Units)						
Sales Revenue						
Expenses						
Unit Variable Cost						
Variable Cost						
Fixed Cost						
Depreciation						
Taxable Income						
Income Taxes (35%)						
Net Income						
Cash Flow Statement						
Operating Activities						
Net Income						
Depreciation						
Investment Activities						
Investment						
Salvage						
Gains Tax						
Net Cash Flow						
PW(15%)						