Review Session

Overview:

- Comprehensive
- 2 hours
- 2 sections
- Each section will have 6 numbered parts, of which you may skip one. This means that we will drop the worst part from each of the two sections.

Overview:

- Each part will include information you will use to answer the questions in that part.
- These questions will be indicated with letters: (a) if there is one, (b) if there is a second, and so forth.
- The exam is closed book and notes.

Section 1:

- This will cover the information that was on the mid-term.
- The original five parts will be repeated with minor edits.
- There will be one additional question.

Section 1 Part 1: Cost functions

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- Average cost,  marginal cost, incremental costs.
- When do they exist, when do they differ, when do the differences matter.
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Section 1 Part 2: Regression and Plotting

- Cost Estimation Lecture
- Cost Estimation Excel Example

Practice plotting data and adding a trend line using your tool of choice.

Section 1 Part 3: Interpret Plots of Data and Trends

- Review the characteristics of good model fit.

- Consider both how to use intuition to interpret the model, and how to use the relation between the data and the model (or trend line) to evaluate the model.
- Remember that just because data is on the graph, does not mean that we should be using it.
- The details of this question will come from the homework assignment in the excel example.

Section 1 Part 4: Constrained Maximization

- Be able to set up an objective function.
- Identify the choice variables.
- Identify the constraints.
- Understand what it means for a constraint to bind, or to be slack.
- Understand shadow constraints, and explain their real world meaning.
- The details from this question will come from the Non-linear programming lecture

Section 1 Part 5: Multiple Choice questions about taxes.

Key tax concepts:

1. Assets, investments, and projects all have different pre-tax returns (r).
2. Tax rates t vary across individuals, jurisdictions, organizations, and assets.
3. pre-tax returns r correspond to post tax returns $r(1-t)$
4. When preferential tax treatment increases demand for a tax favored asset it's price increases and/or the return to holding it decreases. This price change is an *implicit* tax.
5. When tax payers use organizational forms like pensions and insurance policies to avoid taxes it is called *organizational form arbitrage*.
6. When high-tax tax payers issue taxable debt to finance the purchase of tax free debt (e.g. municipal bonds in the US) issued by low-tax tax payers (e.g. US non-profit universities) it is called *clientele arbitrage*.
7. The depreciation *tax shield* is the present value of the reduction in tax payments afforded by the depreciation deduction.
8. The value of the tax shield TS is a function of the investment x, the cash flow it generates k, the risk-free rate of return r, the tax rate t, and the depreciation rate d.
$$TS = f(x, k, t, d, r)$$
9. TS is increasing in both d and t.

Section 1 Part 6: Data Science work flow

- Review the "A 'Data Science' Workflow" Section of the Cost Estimation Lecture

- You should have a sense for the flow of the "management accounting" data work flow.

Section 2 - What we've covered since the midterm

Economics of agency

- The following issues will be covered:
  - Separation of ownership and control
  - The nature of the principal agent problem.
  - Risk aversion and incentives
- These will be questions about the concepts from:
  - Incentives and Compensation and
  - Examples

  Note that the details of the Rothwell problem will not be tested.

Section 2 Part 2: Transfer Pricing

- Vik-Giger
- Why do we need transfer prices?
  - Overconsumption of common resources.
  - Transmit information and incentives within a decentralized firm.

Section 2 Part 3: Cost Allocation

- The key concept here is that cost allocations (including transfer prices) function as 'Pigouvian' taxes
  - Taxes reduce the taxed activity
  - Negative taxes are subsidies, and increase the subsidised activity

Section 2 Part 4: Absorption Costing

- Navisky, Aspen, Kothari problems (don't worry, I won't ask all of them)
- add the breakdowns to navisky TODO

Section 2 Part 5: Activity Based Costing Conceptual understanding of how activity based costing improves on simple aborption costing

Section 2 Part 6: Budgets/Standard Costs Concept on budgets

Line up the breakdown of the variances