FINA 1082 –Financial Management
Capital Budgeting/Project Evaluation II
Tutorial Solutions for Lecture 11

Note that detailed answers to tutorial questions will only be provided in tutorials. The following abridged answers are intended as a guide to these detailed answers. This policy is in place to ensure that you attend your tutorial regularly and receive timely feedback from your tutor. If you are unsure of your answers you should check with your tutor, a pit stop tutor or the lecturer.

A. Short Answer Questions

A1. Choice "c" is correct. When analyzing a single investment project, both NPV and IRR will result in the same conclusion.
Choice "a" is incorrect. NPV and IRR rankings can differ when the projects are of differing scales.
Choice "b" is incorrect. The correct statement is that *all independent* projects that have a positive NPV should be undertaken.
Choice "d" is incorrect. The PV method is considered superior to the IRR method.

A2. Choice "c" is correct. For internal rate of return, cash flows are assumed to be reinvested at the rate determined in the model. For the net present value model, cash flows are assumed to be reinvested at the weighted average cost of capital.

A3. Choice "c" is correct. Changes in the discount rate (cost of capital) will affect project cash flows more when the cash flows are received in later periods. The steeper slope of the NPV profile illustrates this increased sensitivity to discount rate changes.

B. Problems

B1. Choice "c" is correct. The IRR is derived based on the following calculations

Year	Cash Flow Inputs
0	-$340,000
1	80,000
2	120,000
3	140,000
4	70,000
5	25,000

$$0 = \frac{80,000}{(1+r)^1} + \frac{120,000}{(1+r)^2} + \frac{140,000}{(1+r)^3} + \frac{70,000}{(1+r)^4} + \frac{25,000}{(1+r)^5} - 340,000$$

B2. Choice "b" is correct. The value of the asset is the present value of four flows of $6,000 from time 1 to time 4, discounted at 6% i.e. $20,991. The interest expense in the first year is 6% × 20,791 = $1,247, meaning that the capital repayment is 6,000 – 1,247 = $4,752.

B3. Choice "a" is correct

	$
Machinery	50,000
Lost rental income	20,000
Saved disposal cost	(10,000)
Net Cash Outflows	**60,000**

B4. Choice "b" is correct. Only project 2 should be selected because it is the only project with a positive NPV. The answer is derived based on the following calculations, using the WACC of 13% as the discount rate.

Year	NPV Project 1	NPV Project 2
0	$ (100,000)	$(150,000)
1	53,097	70,796
2	31,326	54,821
3	13,861	34,652
	$ (1,716)	**$ 10,269**

Hint: For typical projects, the proper discount rate for the NPV calculation is the firm's WACC regardless of how a specific project is financed.

B5. Choice "c" is correct. Since the capital structure is 60% debt and 40% equity, ABC will finance its $10 million project with $6 million of debt and $4 million of equity. Since the %6 million of debt falls into the range for 5.25% debt financing and the $4 million of equity falls into the range for 7.25% equity financing, those are the marginal costs of capital for the new debt and the new equity.