Solutions to numerical problem on test 4

1:

Year	Cash flow	PV of Cash flow	Cumulative PV of Cash flow	
0	-$700 million	-$700.0 million	-$700 million	
1	200 million	181.8 million	-518.2 million	
2	370 million	305.8 million	-212.4 million	
3	225 million	169.0 million	-43.4 million	
4	700 million	478.1 million	434.7 million	←3 years +$43.4million/$478.1 million = **3.09 years**

2:

Year	Project A Cash Flow	Project B Cash Flow	A-B
0	-$100,000	-$200,000	$100,000
1	25,000	50,000	-25,000
2	25,000	50,000	-25,000
3	50,000	80,000	-30,000
4	50,000	100,000	-50,000

IRR=10.03%

3:

Year	Project Cash Flow	PV of cash outflows	FV of cash inflows
0	-$100,000	-$100,000	
1	$25,000		$39,338
2	$25,000		35,123
3	$50,000		62,720
4	$50,000		56,000
5	$50,000		50,000
		-$100,000	$243,181

PV=$100,000 FV=$243,181 N=5 CPT I/Y = **19.45%**

4:

Year	Bus S		Bus L
0	-$50,000		-$75,000
1	$25,000		$23,000
2	$25,000		$23,000
3	$25,000	-$50,000 = -$25,000	$23,000
4		$25,000	$23,000
5		$25,000	$23,000
6		$25,000	$23,000
		NPV=$11,736.26	NPV=$12,043.10

5:

Do not abandon

Year	Project Cash Flow
0	-$25,000
1	$7,000
2	$7,000
3	$7,000
4	$7,000
5	$7,000
	NPV = $1,535.50

Abandon after one year

Year	Project Cash Flow
0	-$25,000
1	$7,000 + $20,000
	NPV = -$454.50

Abandon after two years

Year	Project Cash Flow
0	-$25,000
1	$7,000
2	$7,000 + $15,000
	NPV = -454.50

Abandon after three years

Year	Project Cash Flow
0	-$25,000
1	$7,000
2	$7,000
3	$7,000 + $10,000
	NPV = -$78.90

Abandon after four years

Year	Project Cash Flow
0	-$25,000
1	$7,000
2	$7,000
3	$7,000
4	$7,000 + $5,000
	NPV = $604.10

6:

	Depreciable basis	MACRS	Annual depreciation
1	$120,000	0.33	$39,600
2	$120,000	0.45	54,000
3	$120,000	0.15	18,000
4	$120,000	0.07	8,400

	Year 2
Revenues	$100,000
-COGS	- 60,000
-depreciation	- 54,000
EBIT	-$14,000
-taxes	-(-5,600)
+depreciation	+54,000
Operating cash flows	$45,600

7:

*Book value of equipment at the end of 4 years is $0
Gain on sale = $10,000 - $0 = $10,000
Tax on gain = $10,000 * 40% = $4,000

	Terminal Cash flow
Sell equipment	$10,000
-tax on gain	-4,000
Operating cash flows	$6,000

8:

Year	**Cash flow**
0	-$120,000
1	39,840
2	45,600
3	31,200
4	$27,360 + $6,000

NPV=-$4,668.10