

Solutions to Quiz 2

a.					
Revenues	15000000				
- Production Cost	3000000				
- Payroll	2000000				
- Depreciation	6250000	! This includes depreciation on sunk cost, since this acctg statement			
- Allocated Advertising	1375000	! This is based on allocation, again because this is a income statement			
Operating Income	2375000				
- Taxes	950000				
Operating Income after taxes	1425000				
b.					
Initial Investment =	30000000	! Includes capitalized market testing expenses			
Ending Salvage Value =	5000000	! Assumes market testing expenses are not amortized			
Average Book Value =	17500000	! If market testing not capitalized, this will be 15,000,000			
Return on Capital =	8.14%	! If market testing not capitalized, this would be 12%			
		(If you ignore the sunk costs, the return on capital is 12%)			
Depending upon your definition of starting and ending book value, and whether you included working capital, the averages ranged from \$ 13.5 million to \$ 18 million. I gave full credit for all of the alternatives.					
c.					
The most direct way to do this is to do the operating income from scratch, using only incremental amounts					
Revenues	15000000				
- Production Cost	3000000				
- Payroll	2000000				
- Depreciation	5000000	! The depreciation on testing is not incremental			
- Incremental Advertising	2500000	! Focus on incremental advertising expense			
Operating Income	2500000				
- Taxes	1000000				
Operating Income after taxes	1500000				
+ Depreciation	5000000				
ATCF	6500000				
You can also get there from the operating income in part a.					
Operating Income after taxes	1425000				
+ Depreciation	6250000				
ATCF	7675000				
- Tax Benefit from Sunk Deprec'n	500000	! This is the Depreciation on Testing Expense * Tax Rate			
- Additional Adv. Cost (1-t)	675000	! (\$2.5 million - 1.375 million) * (1-t)			
ATCF	6500000				
d.					
Year	0	1	2	3	4
Investment in Equipment	\$ 25,000,000				
Investment in Working Capital	\$ 1,500,000				
ATCF		\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000
Salvage Value					\$ 6,500,000
Total ATCF	\$ (26,500,000)	\$ 6,500,000	\$ 6,500,000	\$ 6,500,000	\$ 13,000,000
PV of Total ATCF	\$ (26,500,000)	\$ 5,772,647	\$ 5,126,684	\$ 4,553,006	\$ 8,087,044
Cost of Capital =	12.60%	! Use the beta of software firms			
NPV =	\$ (2,960,620)				
IRR =	7.71%				
Salvage Value includes \$ 5 million from equipment and \$1.5 million from working capital.					