

Chapter 8, Problem 10

Shrinking Stomach: Decision Tree Analysis

Input values		
Discount rate		8%
Clinical trials duration		2 years
Clinical trials cost		\$20,000,000
Probability of success with clinical trials		0.7
FDA approval process duration		1 year
FDA approval process cost		\$10,000,000
Probability of success with FDA		0.8
Payoff at launch (end of FDA process)		\$70,000,000
FDA Process Phase		
Project payoff at the end of Year 3	$0.8(\$70,000,000) + 0.2(\$0)$	\$56,000,000
PV at the end of Year 2	$\$56,000,000/(1+0.08)^1$	\$51,851,852
Less FDA phase cost		-\$10,000,000
Project NPV at the end of Year 2	$\$51,851,852 - \$10,000,000$	\$41,851,852
Clinical Trials Phase		
Project payoff at the end of Year 2	$0.7(\$41,851,852) + 0.3(\$0)$	\$29,296,296
PV at Year 0	$\$29,296,296/(1+0.08)^2$	\$25,116,852
Less clinical trial phase cost		-\$20,000,000
Project NPV at Year 0	$\$25,116,852 - \$20,000,000$	\$5,116,852

