

Introduction to PrecisionTree 5.5

Erik Westwig
Palisade Corporation

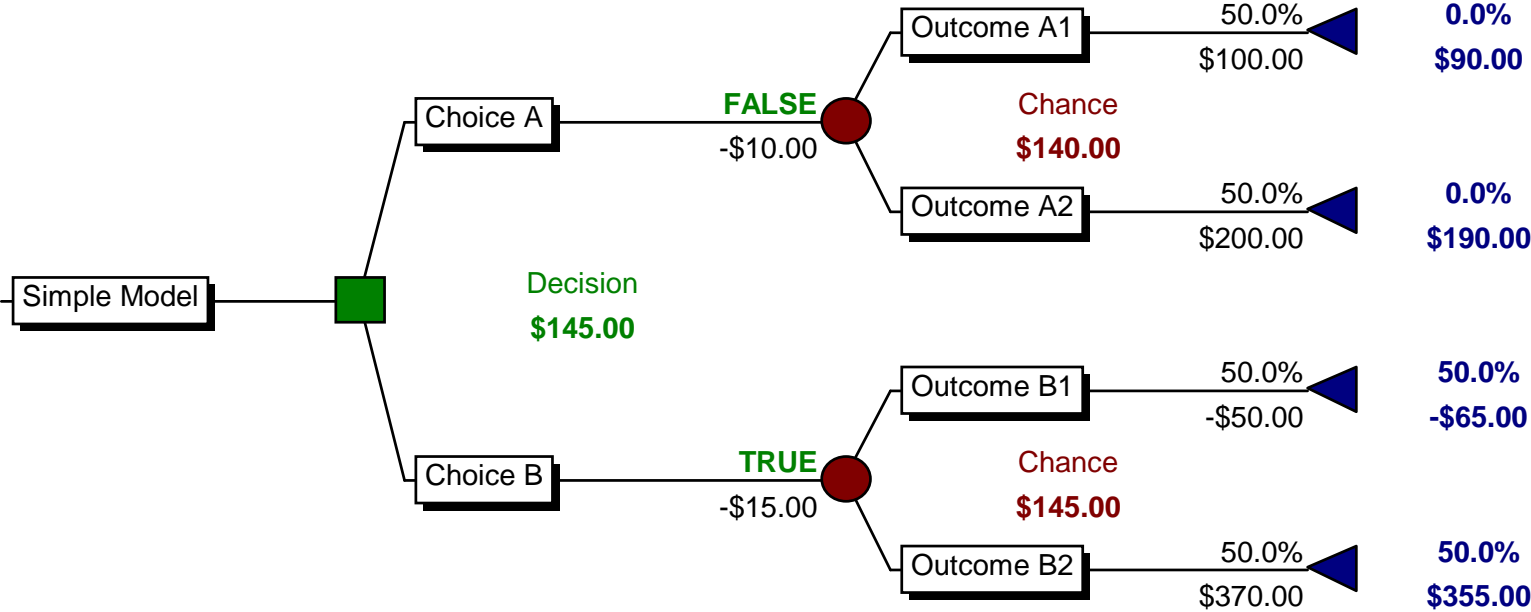
What's New in PrecisionTree 5.0/5.5?

- Tighter Integration with Excel
- Updated Graphics and Reports
- Better Model Debugging Tools
- Fully Automatable Using Visual Basic for Applications
- Fully Internationalized (Version 5.5)
 - English, French, German, Spanish, Italian, Japanese

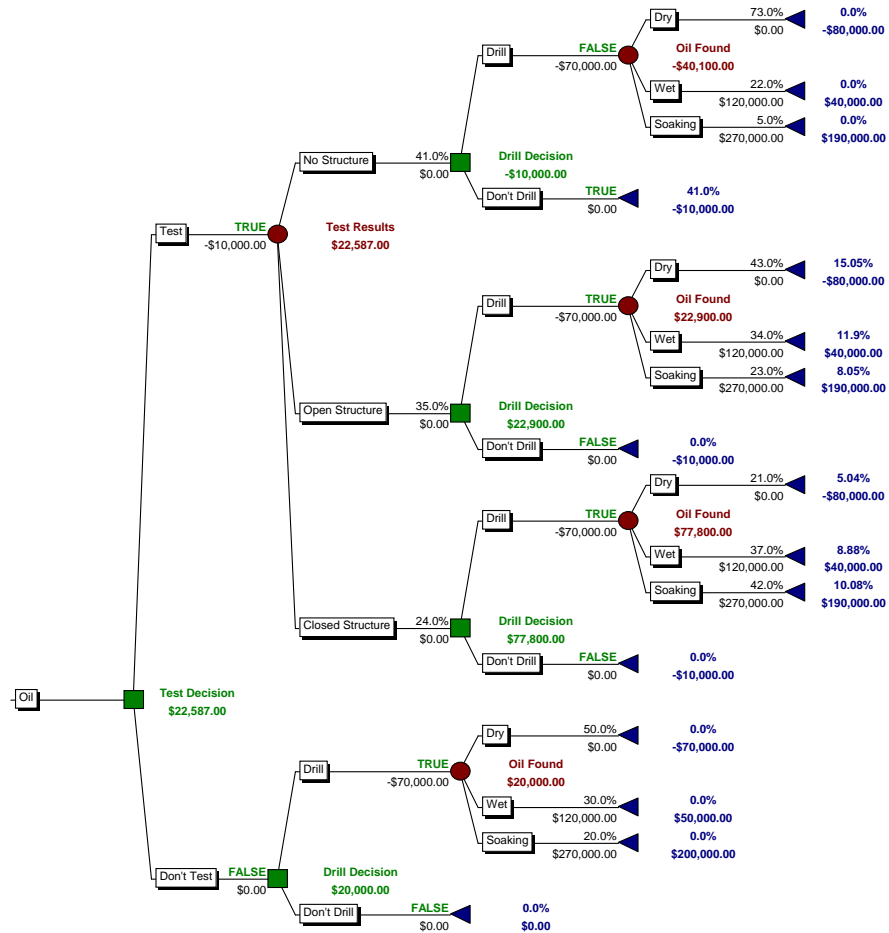
Overview of PrecisionTree

- Decision Analysis Add-in for Microsoft Excel
- Analysis of
 - Decision Trees
 - Influence Diagrams
- Analysis Capabilities
 - Risk Profiles
 - Policy Suggestion
 - Sensitivity Analysis
 - Integration with Other Excel and Palisade Tools

A Simple Decision Tree



A Not So Simple Decision Tree



Decision Tree Calculation

- Calculate All End-Node Path Values
- Apply Utility Function (If Specified)
- “Rollback” the Tree in Reverse
 - Simplify Chance Nodes
 - Make Optimal Choices
 - Repeat Until Done

Model Analysis

Risk Profiles

A *Risk Profile* is a discrete probability distribution, showing each possible outcome of the model, and its associated probability.

Model Analysis

Policy Suggestion

A *Policy Suggestion* Report identifies the optimum choices for each decision in a model.

Model Analysis

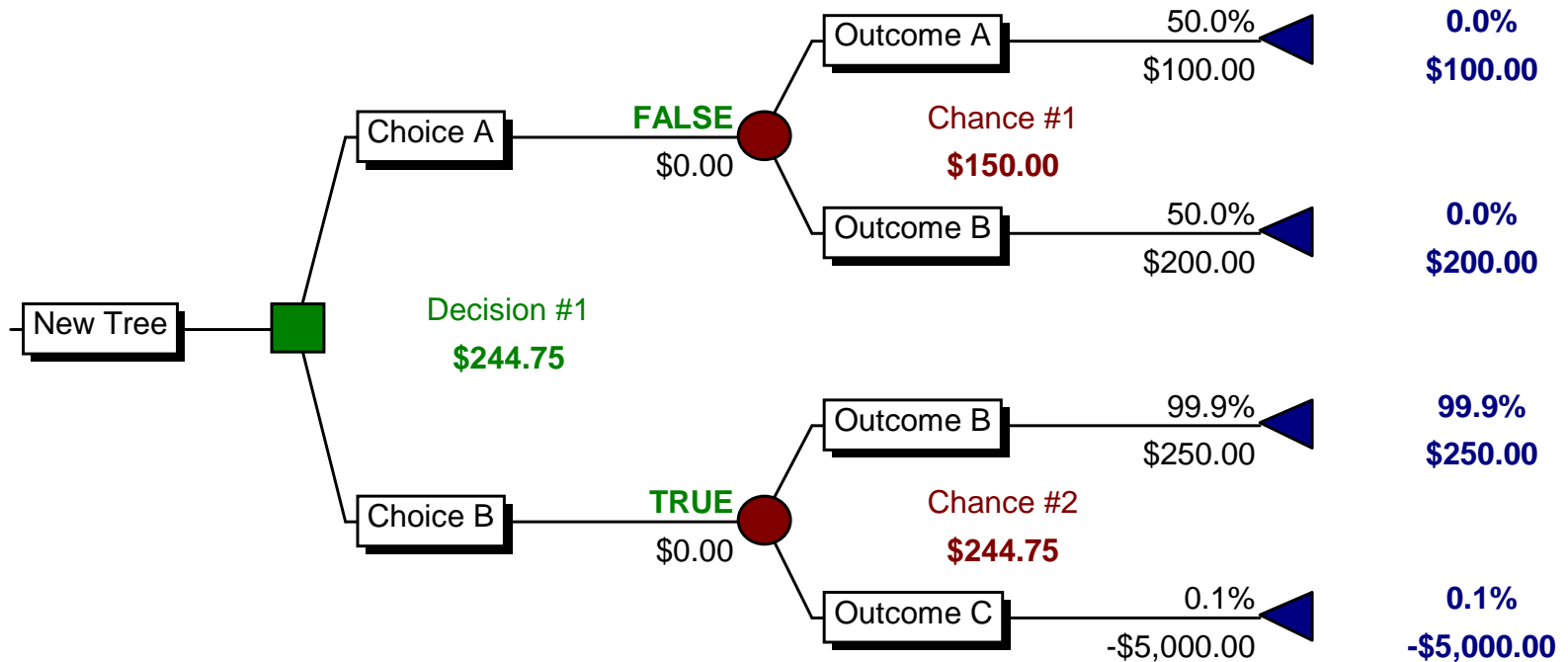
Sensitivity Analysis

A *Sensitivity Analysis* shows how changing one or more of the underlying assumptions of the model affects the outcome.

Payoff Calculation Methods

- Cumulative
- Formula
- Linked Spreadsheet
- VBA Macro

(Mis)Analysis Using Expected Values



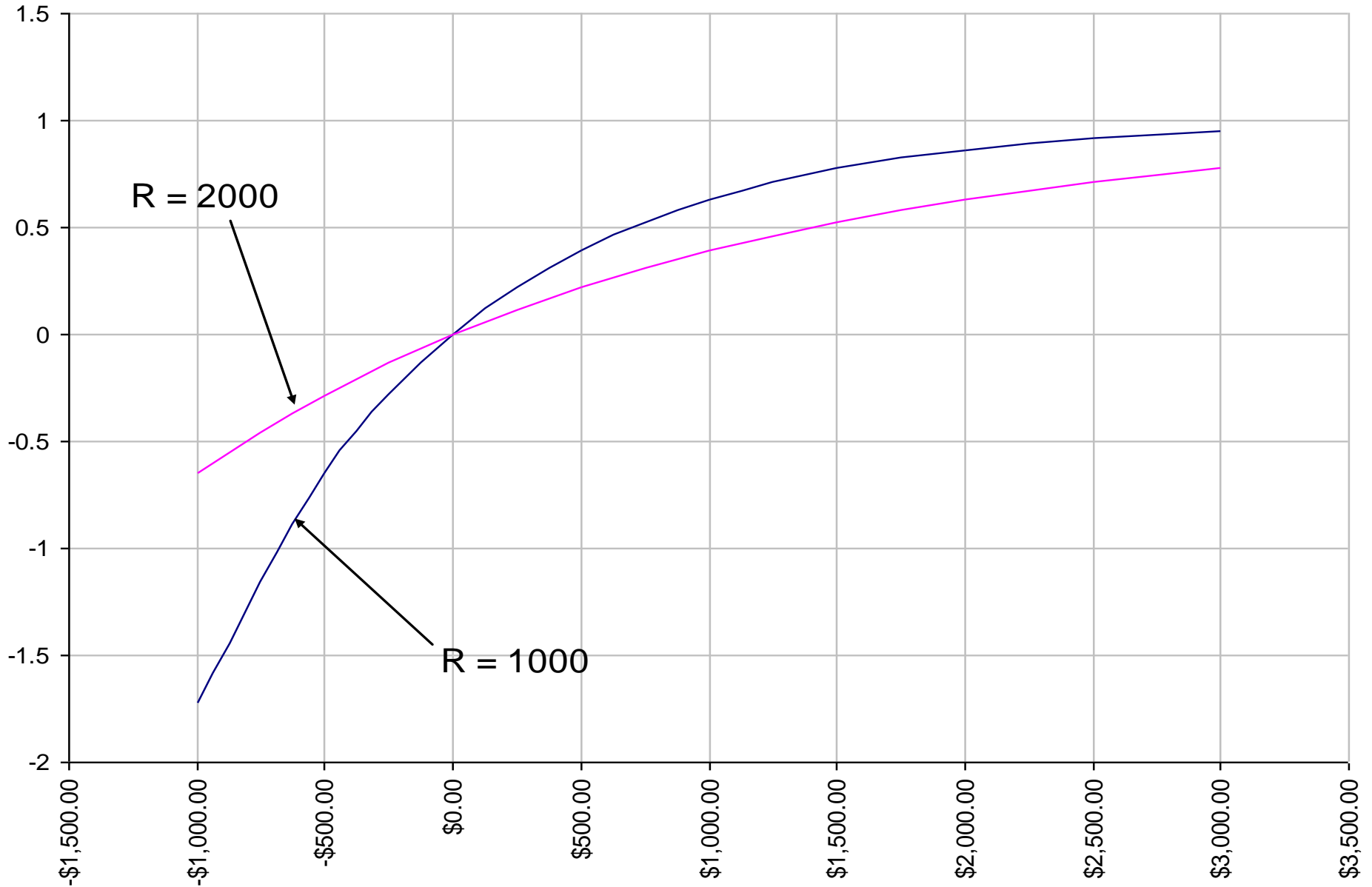
Utility Functions

Use a *Utility Function* to recognize that the value of money is not linear.

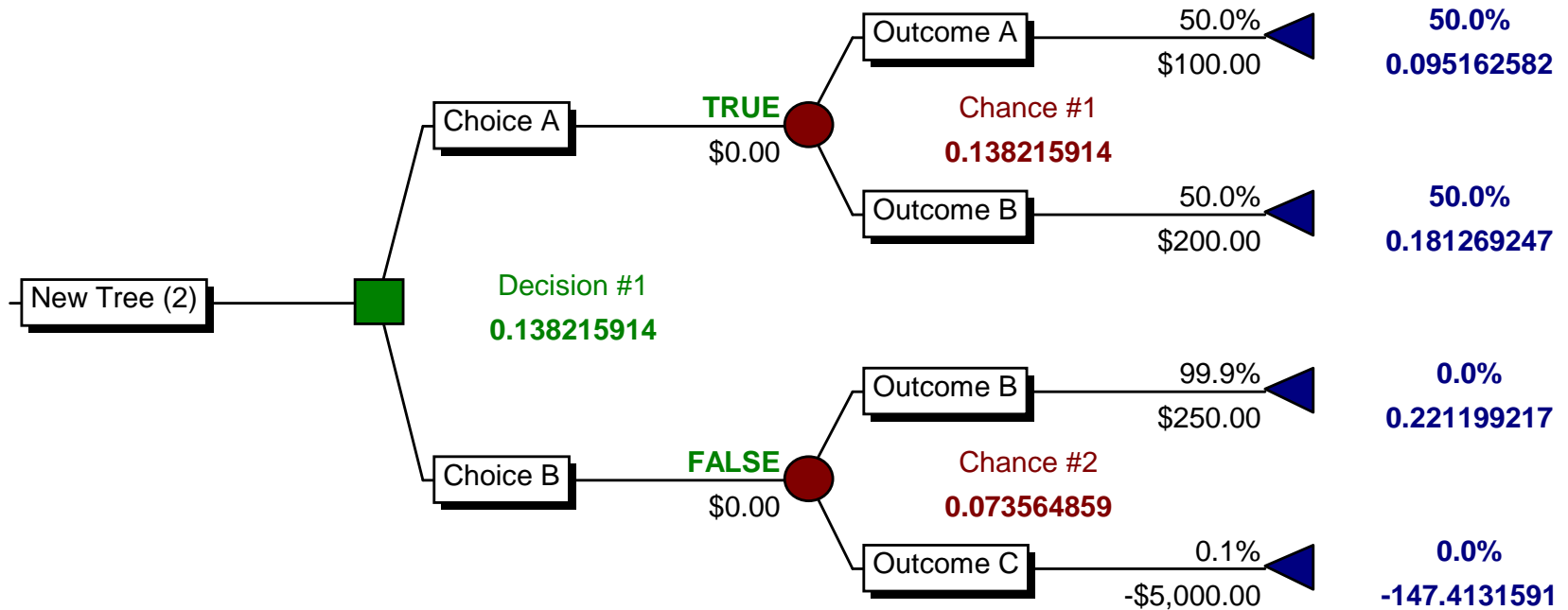
Stupid Example:

Compare the relative attitudes of Erik Westwig to Bill Gates concerning a venture worth \$1000.

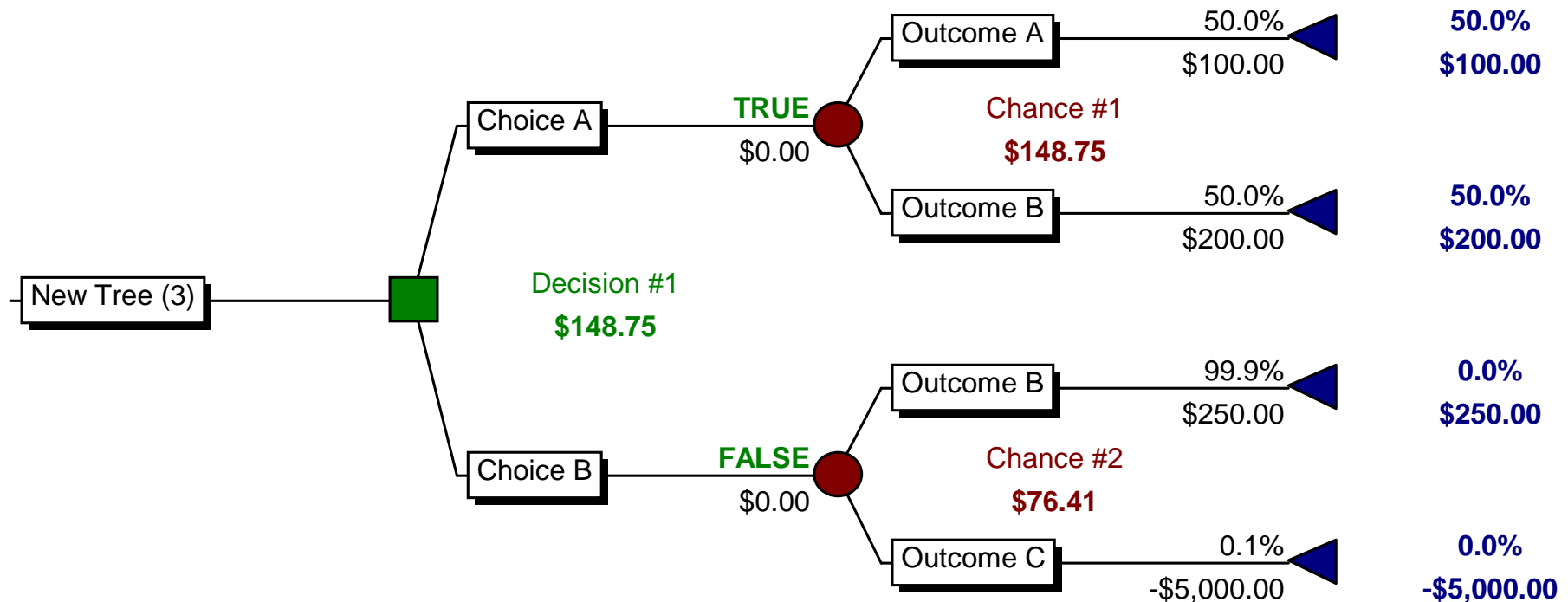
Exponential Utility Function



Analysis with Exponential Utility R=1000



Analysis with Exponential Utility Function $R=1000$ (Certainty Equivalents)



PrecisionTree and VBA

PrecisionTree 5.0/5.5 has a new programmatic interface which can be called easily from within Excel.

- Calculation of Models using VBA
- VBA Automation

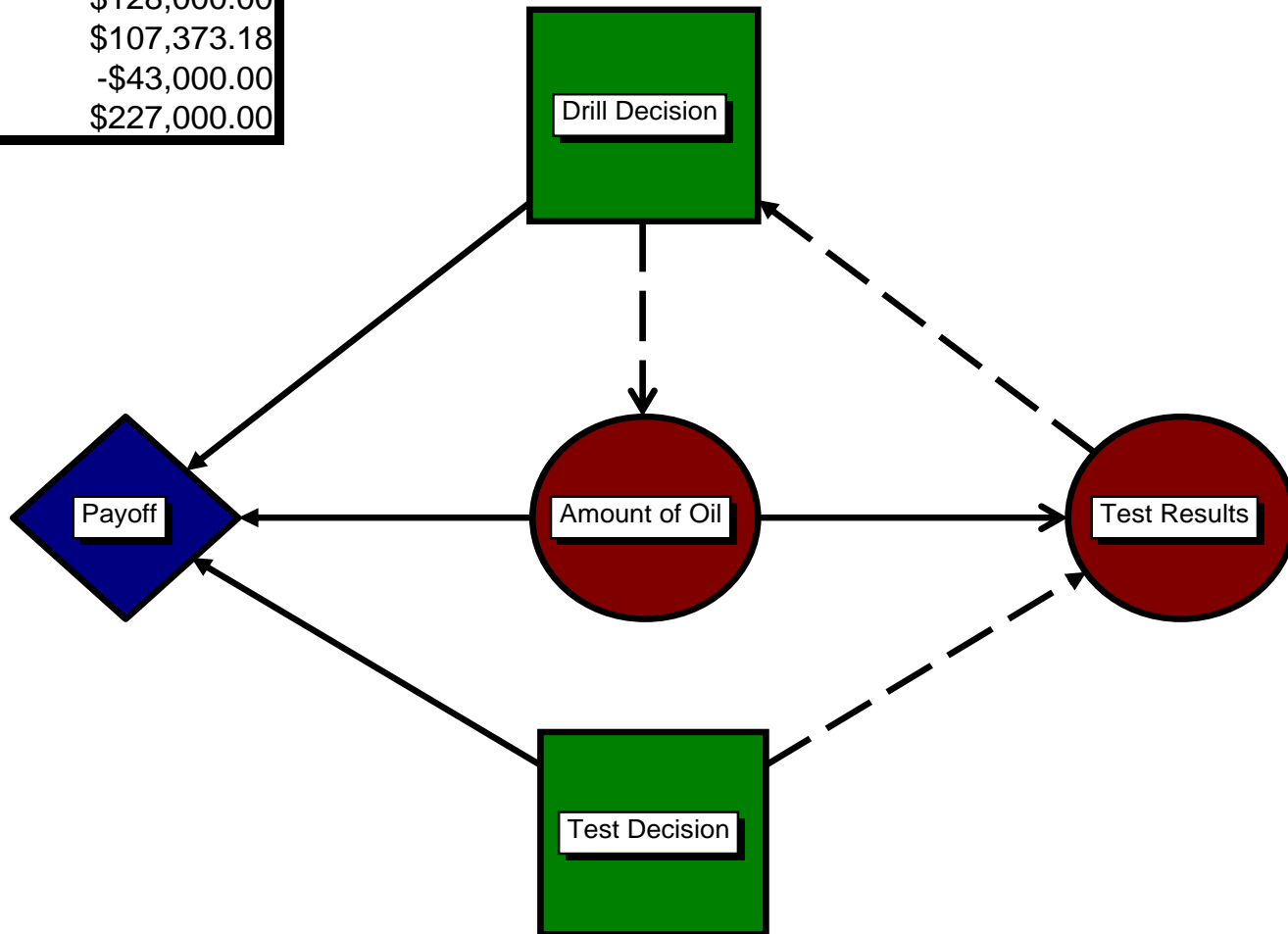
Influence Diagrams

- Advantages
 - Compact
 - Automatic Bayesian Revision
- Disadvantages
 - Difficult to Understand
 - Hard to Build Asymmetric Models

A Example Influence Diagram

PrecisionTree

Oil Diagram	
Expected Value	\$128,000.00
Std. Deviation	\$107,373.18
Minimum	-\$43,000.00
Maximum	\$227,000.00





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