Example: WTP for a Test

Formally: Value of Information or "VOI"

Strategy:

- 1. Replace **price** of test with variable **X**
- 2. Solve for highest value of X for which it's best to buy the test

Applying to previous car example:

Car price: \$2500

Condition	Value	Probability
Good (G):	\$4000	30%
Bad (B):	\$1000	70%

Infallible test:

Condition	Report rG	Report rB
G	100%	0%
В	0%	100%

- Update: payoffs using **X** instead of \$400
- Omit the impossible branches for clarity



Evaluate the right-most nodes and simplify:



Evaluate and simplify again:



Finally:

- N (no action) beats B since \$0 > -\$600
- If X=0 T (test) beats N (next best option) since \$450 > \$0
- What's the maximum X where T is at least as good as N?

Payoff from T = payoff from next best option

Payoff from T = payoff from N

-X + 450 = 0

X = \$450

Maximum WTP for the test: \$450 Thus, value of information: \$450

Connecting to previous example with \$400 test:

WTP = \$450 P = \$400 CS = WTP - P = \$50