# 11.1 Uncertainty and Expected Value

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risk neutral decision makers
Expected value

Coin Flip:
$H=10$, $T=-10 \Rightarrow EV = \frac{1}{2}(10) + \frac{1}{2}(-10) = 0$

Probability distribution function = PDF

Contingencies: $V_i$: $-5, -1, 2, 10$
Probability: $F_i$: $.1, .1, .5, .3$ $\Rightarrow EV = \sum_{i=1}^{4} F_i \cdot V_i = 34/10 = 3.4$

$EV = \sum F_i \cdot V_i = \int_{-\infty}^{\infty} f(x)\,dx$

$ENB = \sum (B_i - C_i) \cdot F_i$

Contingencies exhaustive + mutually exclusive

$$\sum F_i = 1$$

Scenarios, enough to be representative of underlying contingencies

Risk averse

Probabilities: Objective vs subjective