Decision Theory

测验, 4 个问题

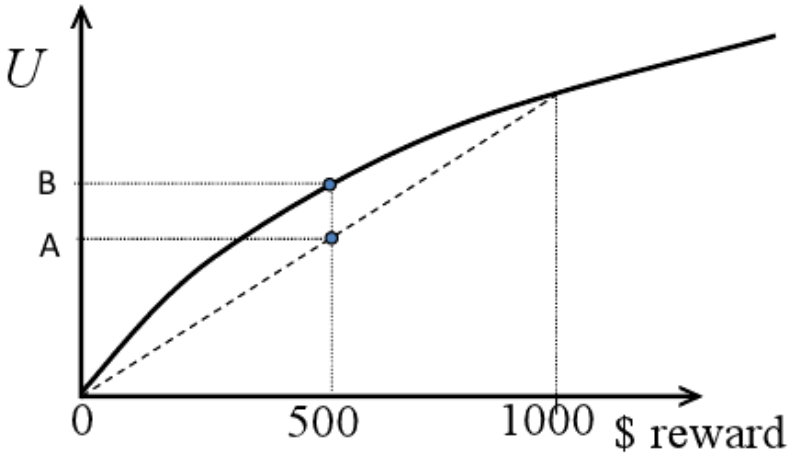
恭喜！您通过了！

下一项

1 / 1
分数

1.

Utility Curves. What does the point marked A on the Y axis correspond to? (Mark all that apply.)



- [ ] $500

未选择的是正确的

- [ ] $U(\$500)$

未选择的是正确的

- [ ] $U(\ell)$ where ℓ is a lottery that pays \$0 with probability 0.5 and \$1000 with probability 0.5.

正确
Yes, this is correct, since the value of the lottery is equivalent to $0.5\,U(\$0) + 0.5\,U(\$1000)$.

- [ ] $0.5\,U(\$0) + 0.5\,U(\$1000)$

正确

This is correct, as you can observe from the geometry of the triangles in the figure.

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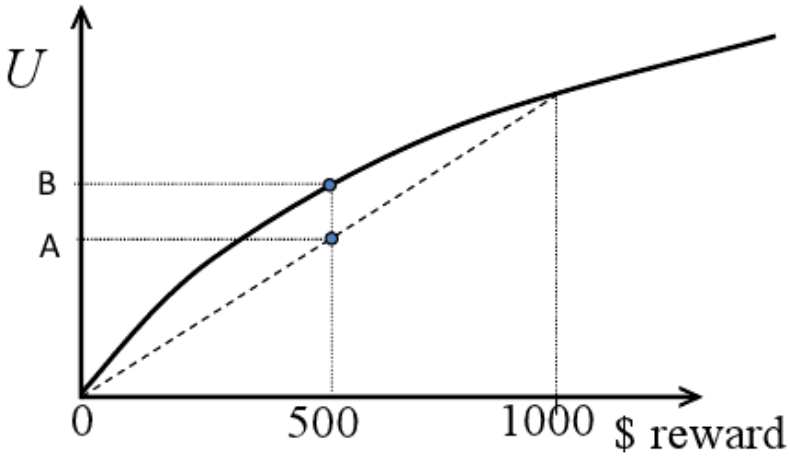
分数

2.

Utility Curves. What does the point marked B on the Y axis correspond to? (Mark all that apply.)



- [ ] $U(\$500)$

正确

Yes, this is correct, since point B is on the curve, it represents $U(\$500)$.

- [ ] $0.5\,U(\$0) + 0.5\,U(\$1000)$

未选择的是正确的

- [ ] $U(\ell)$ where ℓ is a lottery that pays \$0 with probability 0.5 and \$1000 with probability 0.5.

未选择的是正确的

- [ ] \$500

未选择的是正确的

1 / 1
分数

3.

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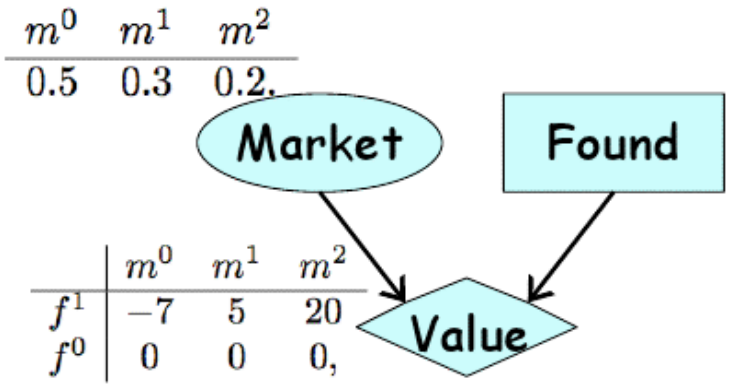
Expected Utility. In the simple influence diagram on the right, with the CPD for M and the utility function V, what is the expected utility of the action f^1?



- 0
- 2

正确

This is correct. The expected utility is given by 0.5*(-7) + 0.3*5 + 0.2*20 = 2.

- 5
- 20

1 / 1
分数

4.

Decision Theory

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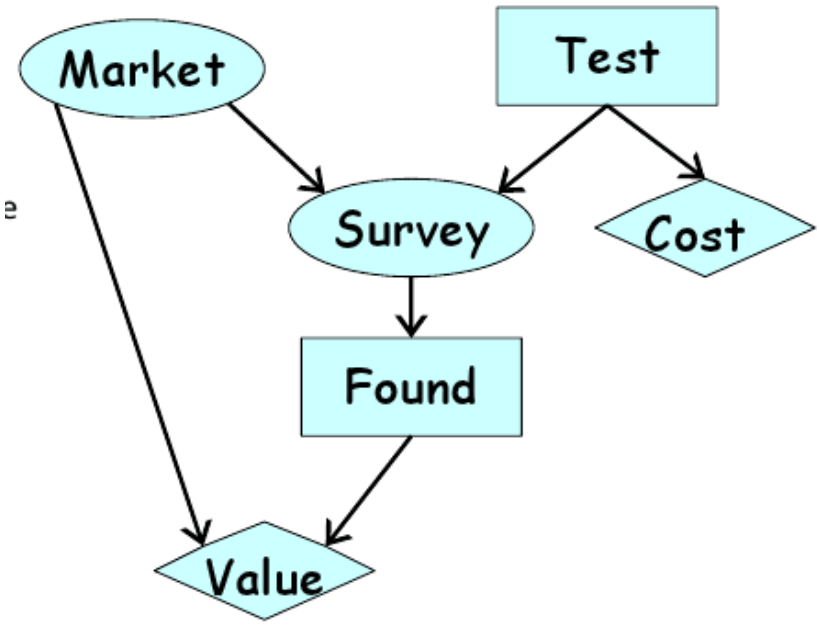
***Uninformative Variables.** In the influence diagram on the right, what is an appropriate way to have the model account for the fact that if the Test wasn't performed (t^0), then the survey is uninformative?



- Set $P(S \mid M, t^0)$ so that S takes the value s^0 with probability 1.
- Set $P(S \mid M, t^0)$ so that S takes some new value "not performed" with probability 1.

正确

This is the appropriate action. Assigning S to any other value would not be desirable, as these other values may represent survey results, but we have not actually conducted the survey.

- Set $P(S \mid M, t^0)$ to be uniform.
- Set $P(S \mid M, t^0) = P(S \mid M, t^1)$.