Decision Theory

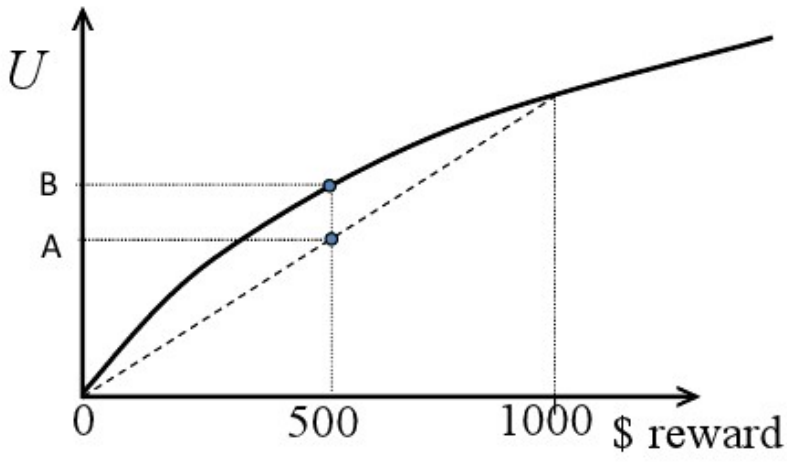
4/4 得分（100%)

测验通过！

返回第 4 周课程

1 / 1 分

1.
Utility Curves. What does the point marked A on the Y axis correspond to? (Mark all that apply.)



$0.5U(\$0) + 0.5U(\$1000)$

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

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

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

☐ $U(\$500)$

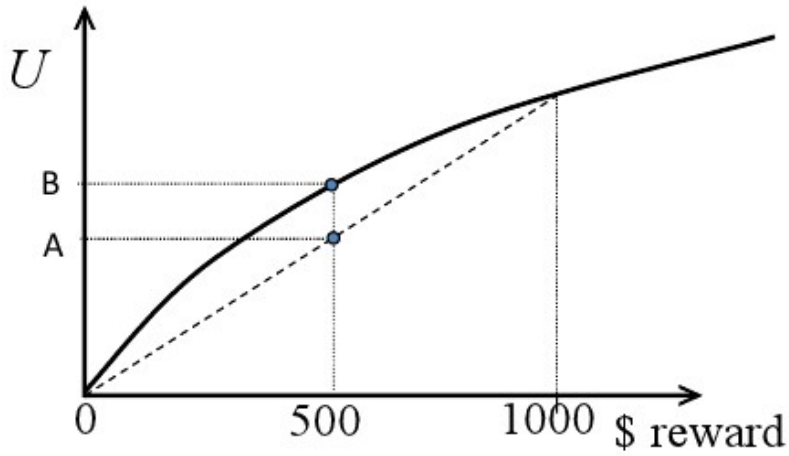
正确回答
A is not on the utility curve.

☐ \$500

正确回答
Think about what the plot is showing.

✔ 1 / 1 分

2.
Utility Curves. What does the point marked B on the Y axis correspond to? (Mark all that apply.)



☐ $\$500$

正确回答
Think about the fact that B lies on the curve.

- [x] $U(\$500)$

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

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

正确回答
Think about the fact that B lies on the curve.

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

正确回答
Think about the fact that B lies on the curve.

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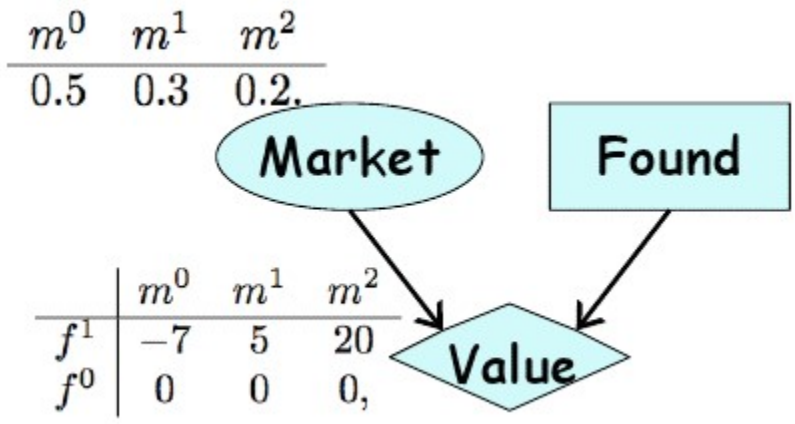
1 / 1 分

3.

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?



- 20
- 5
- 0
- 2

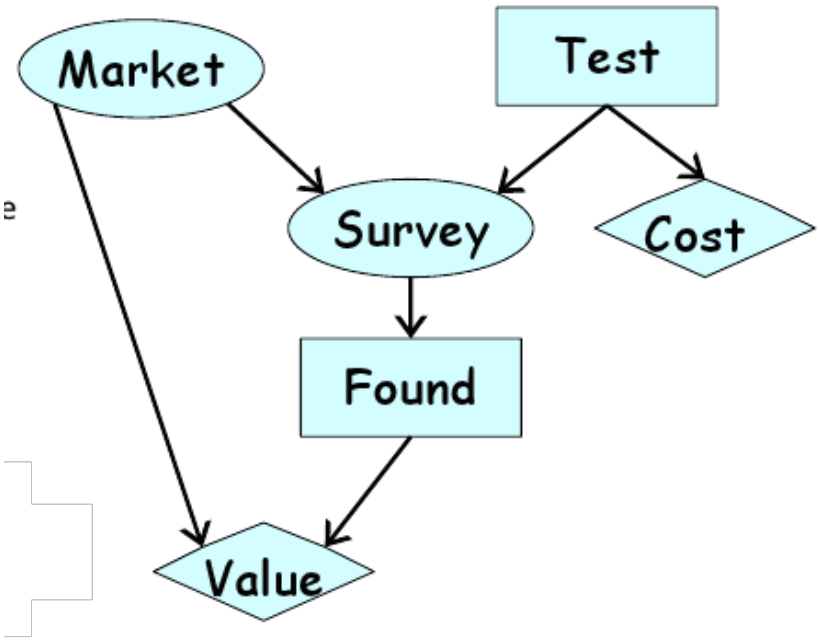
正确回答

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

1 / 1 分

4.

***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 $P(S|M,t^0)$ so that S takes the value s^0 with probability 1.
- Set $P(S|M,t^0)$ to be uniform.
- Set $P(S|M,t^0)$ so that S takes some new value "not performed" with probability 1.

正确回答

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 $P(S|M,t^0) = P(S|M,t^1)$.