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Kahoot!

Duplicate of ACTL3182 Revision

Let this kahoot inspire your own quiz for formative assessment.

- **0** favorites
- **0** plays
- O players

A private kahoot

Questions (20)

1 - Word cloud

What was your favourite part of the course?

30 sec

2 - Quiz

Which utility function is equivalent to $U\left(w\right)$ under the expected utility theorem?

30 sec

- - $U\left(-w
 ight)$

- $aU\left(w\right) +b,\quad b>0$



- $aU\left(w
 ight) +b,\quad a>0$



- $\exp\left(U\left(w\right)\right)$

3 - Quiz

Which of the following is a possible utility function for a non-satiated risk-averse investor? Assume w>0 .

60 sec

- $u\left(w
 ight)=-w^{2}$



- $u\left(w\right) =\ln w$



- $u\left(w
 ight)=w^{1.5}$



- $u\left(w\right) = \sin\left(w\right)$

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4 - Quiz
In the m
shape of

St

Hy

5 - Quiz
What is

In the mean-variance portfolio optimisation with only risky assets, the shape of the minimum variance set is a

20 sec



- Parabola ×
- Hyperbola •
- Concave function >

What is the equation for beta in the Capital Market Line?

30 sec

$$eta_i = \sigma_{iM} \div \sigma_M^2$$

- $eta_i = \sigma_i \sigma_M$
- $eta_i = \sigma_i \div \sigma_M$
- $egin{aligned} egin{aligned} eta_i &= \sigma_M^2 + \sigma_{\epsilon_i}^2 \end{aligned}$

6 - Quiz

Which of the following is not an assumption of APT?

20 sec

- Factors and noise terms are uncorrelated.
- There is a large number of securities.
- No arbitrage.

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| 7 - True or false Asset X has an observed return of 5% and a CAPM return of 4%. X is overpriced. | 20 sec |
|--|----------|
| True | × |
| False | ✓ |
| 8 - Quiz Let F , C be the prices of a forward and a call with the same asset, maturity, strike. There are no storage costs. Then: | 30 sec |
| lacksquare C = F | × |
| $C \leq F$ | × |
| Not enough information. | × |
| $lacksquare C \geq F$ | ✓ |
| 9 - True or false The price of X is equally likely to be \$2 or \$1 tomorrow. Then, the price of X today is \$1.5 (assume no interest). | 20 sec |
| True | × |
| False | ✓ |
| 10 - Quiz Which conditions guarantee no arbitrage in the recombining Binomial Model? | 30 sec |
| | ✓ |
| $d < e^r < u$ | ✓ |
| Put-call parity | × |

All assets have the same return under P.

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11 - Quiz

What is the self-financing condition for portfolio $\mathit{V}_t = \phi_t S_t + \psi_t B_t$?

20 sec





$$dV_t = S_t d\phi_t + B_t d\psi_t$$

$$lacksymbol{V}_T = X, \quad V = e^{-rT} E^Q \left[X
ight]$$

12 - True or false

If X is a process so that $E\left[X_{t}
ight]=t$ then X cannot be a P-martingale.

30 sec





13 - Quiz

Let $\, 0 \leq s < t \, .$ What is the distribution of $\, 2W_s - W_t \,$?

60 sec

$$N\left(0,t-2s
ight)$$

$$N\left(0,2s-t
ight)$$

$$lacksquare N\left(0,t
ight)$$

14 - True or false

Let $\gamma=\frac{\mu-r}{\sigma}>0$. Then, by Girsanov's Theorem $\,\tilde{W}_t=W_t+\gamma t\,$ is a P- 20 sec martingale.

True ×

False ✓

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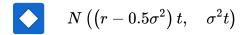
15 - Quiz

In the Black-Scholes model, the stock price under Q is given below. What is the distribution of S_t ?

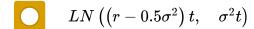
30 sec













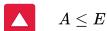
None of the above.



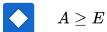
16 - Quiz

Let A,E be the prices of an American/European call option. Given the info below, select the best statement.

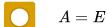
90 sec













Not enough information.

17 - Quiz

Let $\,H>K\,.$ What is the terminal payoff for an option that pays $S_T\,$ if $K < S_T < H$ and 0 otherwise?

60 sec

 $1_{\{K < S_T < H\}}$







 $S_T\left(1_{\{S_T>H\}}-1_{\{S_T\geq K\}}
ight)$

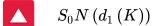
lacksquare $S_T \left(\mathbb{1}_{\{S_T > K\}} - \mathbb{1}_{\{S_T > H\}}
ight)$

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18 - Quiz

Let $\,H>K\,$. What is the price at $\,t=0\,$ of an option that pays $\,S_T\,$ if $K < S_T < H$ and 0 otherwise?

120 sec



 $S_0 N(d_1(K)) - He^{-rT} N(d_2(H))$

X



 $S_{0}N\left(d_{1}\left(K
ight)
ight) -S_{0}N\left(d_{1}\left(H
ight)
ight)$



 $S_{0}N\left(d_{1}\left(H
ight)
ight) -S_{0}N\left(d_{1}\left(K
ight)
ight)$



 $S_{0}e^{rT}N\left(d_{1}\left(K
ight)
ight) -S_{0}N\left(d_{1}\left(H
ight)
ight)$

X

19 - Quiz

Let $\,H>K\,.$ What is the price of an option that pays $\,S_T-K\,$ if

240 sec

 $S_T > H$ and 0 otherwise? *Hint:* draw payoff and use below



 $c(H) + (H - K) N(d_1(H))$

X



 $c\left(K
ight)+\left(H-K
ight)N\left(d_{2}\left(K
ight)
ight)$



 $c\left(H
ight) +\left(H-K
ight) N\left(d_{2}\left(H
ight)
ight)$



 $c\left(K\right)+\left(K-H\right)N\left(d_{1}\left(K\right)\right)$

20 - True or false

I will ace the final and get my exemptions for this course!

20 sec



True



False