MATH39032
Mathematical Modelling of Finance
Week 1 Revision (MATH20912)

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In the following question tick **all** options that apply.

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1. When making a financial investment we should consider:-
   - ◯ the return (relative change in price)
   - ◯ the fundamental value (economic analysis),
   - ◯ the risk (variability in returns),
   - ◯ the historical or current trend (technical analysis).

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2. A share (or stock) is a contract between an investor and a company, where the company agrees to pay a % of profits to the investor. The investor agrees to pay to the company to enter the contract because
   - ◯ they think it makes them sound important,
   - ◯ it potentially offers a high return on their investment,
   - ◯ it offers the safest returns of any investment,
   - ◯ they think they can sell it to someone else for more money.

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3. The role of a stock exchange is to
   - ◯ process the exchange of contracts,
   - ◯ buy and sell shares,
   - ◯ provide up-to-date and historical information about prices and trades,
   - ◯ offer investment advice.

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4. What is an asset?
   - ◯ Something you own.
   - ◯ Something you want.
   - ◯ Something you need.

5. What is the definition of the Market Price of a contract.
   - ◯ The amount quoted on the market at which someone is willing to sell (ask price).
   - ◯ The last price at which a trade happened.
   - ◯ The amount quoted on the market at which someone is willing to buy (bid price).
   - ◯ The average of the bid price and ask price.

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6. An investor would like their account balance to be £1000 in 5 years time. The account will be subject to a continuously compounded interest rate of 3% and no further investments can be made. How much do they need to invest now?
   - ◯ £1030.45
   - ◯ £1161.83
   - ◯ £970.45
   - ◯ £860.71

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7. What does $S(t)$ normally represent?
   - ◯ time value of money,
   - ◯ value of a stock at time t,
   - ◯ market price of a stock at time t,
   - ◯ market price of a share at time t.

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8. The definition of a put option P is
   - ◯ the option to buy on a future date
   - ◯ the option to sell on a future date
   - ◯ an agreement to buy on a future date
   - ◯ an agreement to sell on a future date.

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9. If I sell a put option I agree to
   - ◯ sell to the other party but I have the option to cancel
   - ◯ buy from the other party but I have the option to cancel
   - ◯ sell to the other party and they have the option to cancel
   - ◯ buy from the other party and they have the option to cancel

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10. My payoff increases when selling put options if
    - ◯ the share price goes up,
    - ◯ the share price doesn't move,
    - ◯ the share price goes down.