! **Try again once you are ready**

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Trading Concepts Review

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1. **Which of these are common types of quantitative trading strategies?** 0.75 / 1 point

- [ ] Forecasting
- [x] Mean reversion

  ✓ **Correct**
  Mean reversion of prices or returns is one of the three correct answers. Please refer to the video on "Quant Strategies" to learn the other two.

- [x] Correlation/Cointegration

  ✓ **Correct**
  Correlation/ co-integration of prices is one of the three correct answers. Please refer to the video on "Quant Strategies" to learn the other two.

- [ ] Dickey–Fuller

You didn't select all the correct answers

2. **A stock is observed to have an average price of 50 with a +/- 5 variation over the past 100 trading days. You buy when the stock reaches 45 and sell when it reaches 55. What kind of arbitrage is this?** 1 / 1 point

- ( ) Carry
- (•) Statistical
- ( ) Merger
- ( ) Liquidation

  ✓ **Correct**
  Statistical arbitrage is the correct answer. This is similar to the example given in Statistical Arbitrage-Mean Reversion.

3. **Which of these are challenges in statistical arbitrage?** 1 / 1 point

- [x] Trading, clearing, and exchange fees

  ✓ **Correct**
  Trading, clearing, and exchange fees are a drag on trading profitability, especially for high-frequency trading. Please refer to the video on Statistical Arbitrage Opportunities and Challenges for other costs.

- [x] Risk-based charges

  ✓ **Correct**
  Risk-based charges are a drag on trading profitability, especially for high-risk trading. Please refer to the video on Statistical Arbitrage Opportunities and Challenges for other costs.

- [x] Short sale interest

  ✓ **Correct**

Short sale interest is a drag on trading profitability, especially for stocks that are being shorted heavily by other traders. Please refer to the video on Statistical Arbitrage Opportunities and Challenges for other costs.

- [x] **Paying for liquidity**

✓ **Correct**
Paying for liquidity is a drag on trading profitability, especially for thinly traded stocks that have high bid-ask spreads. Please refer to the video on Statistical Arbitrage Opportunities and Challenges for other costs.

4. **Which of these are valid uses of backtesting?** 0 / 1 point

- [x] **Quantify the hypothetical performance of your strategy for comparison with other strategies.**

✓ **Correct**
Backtesting allows you to quantify the hypothetical performance of several candidate strategies so that you can choose those that have the highest return potential in live trading. Please refer to the video on Introduction to Backtesting for other valid uses.

- [ ] **Predict likely capital requirements, trade frequency and risk for your portfolio.**

- [x] **Ensure that your strategy will be profitable in live trading.**

! **This should not be selected**
Backtesting is not a guarantee that your strategy will be profitable in live trading. There is no way to guarantee the performance of a strategy, only to try to maximize its likely performance. Please refer to the video on Introduction to Backtesting for valid uses.

- [x] **Determine your maximum drawdown for your strategy in live trading**

! **This should not be selected**
Backtesting is not a guarantee that your strategy will not suffer a much larger drawdown in live trading. There is no way to guarantee the level of risk of a strategy, only to try to minimize its likely drawdown. Please refer to the video on Introduction to Backtesting for valid uses.

5. **Which of these are common biases in back-testing?** 1 / 1 point

- [ ] **Risk bias**

- [x] **Optimization bias**

✓ **Correct**
Optimization bias, which refers to the tendency to overfit your model to the data, along with look-ahead bias, survivorship bias and drawdown tolerance bias are four of the main potential weaknesses of backtesting.

- [x] **Look-ahead bias**

✓ **Correct**
Look-ahead bias, where you inadvertently incorporate future data in your backtest, along with optimization bias, survivorship bias and drawdown tolerance bias are four of the main potential weaknesses of backtesting.

- [x] **Survivorship bias**

✓ **Correct**
Survivorship bias, where you exclude stocks of companies that are no longer trading, along with optimization bias, look-ahead bias and drawdown tolerance bias are four of the main potential weaknesses of backtesting.

6. **Statistical arbitrage and index arbitrage account for most of the volume in quantitative trading. Please select the examples of stat arb from the choices below:** 0 / 1 point

○ Selling an asset on one trading venue at 110 and simultaneously buying it back for 109.90 at a different trading venue.

○ Selling an asset on one trading venue at 110 and buying it back later for 109 at a different trading venue.

◉ Selling a basket of stocks that matches the composition of the S&P 500 for $300,000 and simultaneously buying 1000 shares of the SPY ETF for $299.70.

Incorrect

No, this is index arbitrage since you are trading a basket of stocks for something that matches a stock index. The key term here is "simultaneously", so there is very little risk that this trade won't be profitable. Stat arb trades are made at different times and expose you to the risk of taking a loss if the market trades in the opposite direction from from your prediction.