Question 1: Why did it become a good investment to bet against mortgage-backed securities.

A) The default rate on the mortgages kept rising.

B) Rating agencies were accurately assigning ratings.

C) Banks were incentivized to issue more and more mortgages.

D) A and C

Correct answer: D

Question 2: In terms of the fundamental law, when aiming for high performance, you can make up for low skill with ___.

A) low breadth

B) low sharpe ratio

C) high breadth

D) high volatility

Correct answer: C

Question 3: Is Bollinger Bands a leading indicator?

A) Yes

B) No, Bollinger Bands is a lagging indicator

C) No, Bollinger Bands is not an indicator

D) No, Bollinger bands is neither a leading or a lagging indicator

Correct answer: B

Question 4: What should you do when the stock hits the bottom Bollinger Band?

A) Hold your position (don't change your position at all)

B) Exit any position you currently have and then hold at 0 shares

C) Short the stock to have negative shares

D) Long the stock to have positive shares

Correct answer: D

Question 5: Who was the first bank Michael approached to make him the CDSs?

A) JP Morgan

B) Goldman Sachs

C) Deutsche Bank

D) Bank of America

Correct answer: B

Question 6: If the Information Coefficient is doubled and the trading opportunities are multiplied by 9, what happens to the Information Ratio.

A) The Information Ratio is multiplied by 1 (remains unchanged)

B) The Information Ratio is multiplied by 4.5

C) The Information Ratio is multiplied by 6

D) The Information Ratio is multiplied by 18

Correct answer: C

Question 7: What is the best way an investor who is lacking in skill can beat a more skillful investor?

A) Hire skillful people

B) Make smarter trades

C) Make more trades per day

D) Pick better stocks

Correct answer: C

Question 8: Which statement is true regarding the Fundamental Law of Portfolio Management?

A) IR = IC * sqrt(BR)

B) IC = IR * sqrt(BR)

C) BR =IC *IR

D) IR = IC + sqrt(BR)

Correct answer: A

Question 9: Which of the following can not improve your performance based on the Fundamental Law?

A) Improve your skill

B) Increase the Breadth

C) Increase the IC and BR

D) Decrease breadth but improve the skill

Correct answer: D

Question 10: What does CDS stand for?

A) Collateralized Debt Swap

B) Credit Default Swap

C) Collateralized Debt Security

D) Credit Default Security

Correct answer: B

Correct answer: A

points;

D) he goal of both unsupervised learning and reinforcement learning

is to find a suitable action model to maximize cumulative reward.

Question 11: In the movie "The Big Short", what did Credit Default Swaps do?

A) Insured the bonds against failure and the insurer paid the claim if the underlying bonds fail

B) Insured the bonds against failure and the insurer paid the claim if the underlying bonds make money

C) To increase employees

D) As an annual practice

Correct answer: A

Question 12: Which of the following is not the keys of Grinold's fundamental law?

A) Skill

B) Performance

C) Luck

D) Breadth

Correct answer: C

Question 13: Which of these scenarios does not indicate an upward trend in stock price:

A) A particular stock's price surpasses the upper Bollinger Band

B) A particular stock's 20-day SMA surpasses its 100-day SMA

C) A particular stock's short-term EMA falls below its long-term EMA

D) The value of a particular stock's Bollinger Band Percentage > 0.8 and its price/SMA ratio is >= 1

Correct answer: C

Question 14: Which of these could represent a State in a Reinforcement Learning problem when referring to a trading scenario?

A) BUY

B) Daily Return

C) Return from Trade

D) All of the above

Correct answer: B

Question 15: Which celebrity chef and "Kitchen Confidential" author explains collateralized debt obligations (CDOs) by comparing them to fish stew?
A) Gordon Ramsay
B) Mario Batali
C) Thomas Keller
D) Anthony Bourdain
Correct answer: D

Question 16: Following statement is true or false: Hedge Funds cannot succeed if EMH applies.

A) True

B) False

Correct answer: B

Question 17: In Reinforcement Learning, the default MDP has an assumption of infinite horizons to overcome that, we introduce a concept of _____ rewards. Multiplying the reward by λ raised to t. Where λ's limits are ___< λ <=___.

A) [reduced , -1, 1]

B) [reduced, 0 , 1]

C) [discounted, -1, 1]

D) [discounted, 0 , 1]

Correct answer: D

Question 18: Do you think that a market that is semi-strong efficient is also weak form efficient? Why or Why not?

A) Yes it does, because semi-strong EMH states that the prices adjust immediately to all publicly available information, which also includes the asset's price history and vol data.

B) No it does not, because semi-strong EMH talks only about fundamental data such as the company's earnings.

C) Yes it does, because semi-strong EMH states that the prices adjust immediately to all publicly and privately available information.

D) No it does not, as semi-strong EMH talks about information that is mutually exclusive to weak form EMH.

Question 19: Given that EMH is about 3 forms, weak, semi-strong, and strong. What would be the behavior of prices, if, for example, the standard investor became one that only bought and held stocks passively?

A) There would be no change in the way that prices adjusted

B) Prices will fail eventually to show any type of new information. There will be incentives to trade more

C) Prices will continue to change based on new information that won't cease to enter the market

D) We would probably enter another recession

Correct answer: B

Question 20: The goals of unsupervised learning and reinforcement learning are:

A) The goal of unsupervised learning is to find similarities and differences between data points; the goal of reinforcement learning is to find a suitable action model to maximize cumulative reward;

B) The goal of unsupervised learning is to find a suitable action model to maximize cumulative reward; the goal of reinforcement learning is to find similarities and differences between data points;

C) The goal of both unsupervised learning and reinforcement

learning is to find similarities and differences between data

Correct answer: B

Correct answer: B

Question 21: What is the meaning of "synthetic CDO" in "the big short" movie?

A) A CDO that contains subprime mortgages

B) A CDO that contains student loan

C) A CDO that contains credit default swaps

D) A CDO that contains corporate debt

Correct answer: C

Question 22: According to the Fundamental Law, which of the following statements is most accurate?

A) Increasing skill and/or breadth will increase performance, but it's more difficult to increase breadth than skill, and increasing skill isn't as effective as increasing breadth.

B) Increasing skill and/or breadth will increase performance, but it's more difficult to increase skill than breadth, and increasing breadth isn't as effective as increasing skill.

C) Utilizing machine learning will increase performance.

D) A Georgia Tech education including CS7646 coursework will increase performance.

Question 23: Suppose you purchase a call option for a single stock (assume that you can do so) for $10 on a day where the stock price is $7 under the strike price. Starting from then, the price rises monotonically through the expiration date, on which the price of the stock is $3 above the strike price. What is the maximum net profit that you can make during this time period, assuming your only choices are to either exercise or not exercise the option?

A) -$10
B) -$7
C) -$3
D) $3

Question 24: Which of the following statements about Dyna is true?

A) Dyna is a model-free based method.

B) Dyna is the basis for Q-Learning.

C) Dyna is a blend of model-free and model-based methods

D) Dyna is more expensive than Q-Learning

Correct answer: C

Question 25: In an actively managed portfolio, what strategy may help you improve breadth?

A) Increase your information ratio

B) Finding additional stocks and markets

C) Increase your information coefficients

D) Trade ETFs only

Correct answer: B

Question 26: Which of the following attribute of Q learning is important in convergence over infinite horizon?

A) rar

B) radr

C) alpha

D) gamma

Correct answer: D

Question 27: According to the movie "The Big Short", which of the following is closest in meaning to a "Credit Default Swap (CDS)"?

A) Going short on the default of mortgage-backed securities

B) Going long on the default of mortgage-backed securities

C) Collateralized Debt Obligation (CDO)

Correct answer: A

Question 28: Which option below correctly describes the advantage of options?

A) You cannot lose more than the premium.

B) You can always get the premium back.

C) Options do not have expiration dates.

D) You can hold options for infinite amount of time.

Correct answer: A

Question 29: Which of the following is NOT an example of a state (s) in reinforcement learning?

A) Holding Long

B) Momentum Value

C) Daily Returns

D) Holding short

Correct answer: C

Question 30: What has the lowest risk ?

A) Stocks

B) Bonds

C) Stocks and Bonds

D) Precious Materials

Correct answer: C

Correct answer: C Correct answer: A

Correct answer: B

Question 31: In the movie, The Big Short, characters in the film, such as Michael Burry, would acquire _____ in order to short the MBS(Mortgage Backed Securities) which means betting against the housing market.

A) Synthetic CDO

B) CDO Squared

C) Credit Default Swaps

D) Sub-prime mortgages

Correct answer: C

Question 32: What has the lowest risk for return?

A) Stocks

B) Bonds

C) Stocks and Bonds

D) Precious material

Correct answer: C

Question 33: In the movie, The Big Short, characters in the film, such as Michael Burry, would acquire _____ in order to short the MBS(Mortgage Backed Securities) which means betting against the housing market.

A) Synthetic CDO
B) CDO Squared
C) Credit Default Swaps
D) Sub-prime mortgages

Correct answer: C

Question 34: Key method to measure the performance of a portfolio manager is:

A) Information Ratio

B) Compound Annual Growth Rate

C) Information Coefficient

D) Specific Risk

Correct answer: A

Question 35: What is TRUE about the efficient frontier

A) The efficient frontier was introduced by William F. Sharpe, who also developed the Sharpe ratio method for calculating risk-adjusted return

B) You can find portfolios not on the efficient frontier that have a higher return for the same amount of risk

C) You can find portfolios not on the efficient frontier that have higher risk for the same amount of return

D) Assuming none of the asset is risk-free, as the expected return decreases, the risk value of the efficient frontier will keep decreasing

Question 36: Which of the following statements related to Efficient Market Hypothesis is NOT TRUE?

A) EMH assumes that agents are rational and people do NOT overreact or underreact when faced with new information.

B) Semi-strong-form efficiency implies that neither fundamental analysis nor technical analysis techniques will be able to reliably produce excess returns

C) Weak form of the EMH leaves room for Fundamental Analysis.

D) In P/E ratio vs Return% dataset graph, The correlation between Price-Earnings ratio, 20-year annualized returns could be used to refute the efficient market hypothesis.

Question 37: Given 2 companies have same Information Ratio Company A has algorithm 100 time smarter than Company B Company A trades for 20 days a year How many trades does company B need to execute?

A) 200000

B) 20000

C) 2000000

D) 2000

Correct answer: A

Question 38: Jared Vennett sells the 'Credit Default Swaps' . What does Mark Baum use it for?

A) Short the market.

B) Buy the same credit swaps again.

C) Buy half the credit swaps.

D) Long the market.

Correct answer: A

Question 39: What is the reason that the main characters in "The Big Short" decide in credit default swaps?

A) They all read a paper that predicted the possible stock market crash.

B) They all noticed that the housing loan market was inflated with high risk loans being structured into loan packages with a AAA rating (low risk rating)

C) They all noticed that the housing loan market was inflated with medium risk loans being structured into high risk loan packages like BB to CCC.

D) They all got tipped off by the SMA for housing loan market
predicting a change in the trend.

Question 40: According to Bloomberg News, what opportunity similar to CDO which several large banks have started selling since 2015?

A) Collateralized Mortgage Obligation

B) Bespoke Tranche Opportunity

C) Asset-Backed Security

D) Synthetic CDO

Correct answer: B

Question 41: Fill in the blank. Transition function is a three dimensional object given by T[s,a,s']. Suppose we are in state "s" and take particular action "a" then the sum of all the next states "s'(s prime)" we might end up in should sum to be __.

A) always 0

B) always 1

C) either 0 or 1

D) always more than 1

Correct answer: B

Question 42: If a stock is said to have good relative strength, it means:

A) The ratio of the price of the stock to a given market index has trended upwards

B) The recent trading volume of the stock has exceeded its average trading volume

C) The stock has performed well compared with other stocks in the same risk category as measured by beta

D) The total return of the stock has exceeded the total return on other stocks in the same industry

Correct answer: A

Question 43: Which stock properties would best be considered to comprise an optimal portfolio with higher combined returns and lower risk than either of the individual stocks.

A) Stocks ABC and DEF with covariance value of +0.9.

B) Stocks ABC and DEF with covariance value of -0.9.

C) Stocks ABC and DEF with combined Sharpe Ratio of 1.0.

D) Stocks ABC and DEF with combined Sharpe Ratio of 0.0.

Correct answer: B

Question 44: When 2 FrontPoint traders, Danny and Porter travel to Miami to investigate current housing development, they learn...

A) there are several large families living in the same house.

B) most homeowners have defaulted on their mortgages and have moved out.

C) landlords in these areas are keeping up with their mortgage payments.

D) they need to long the housing market.

Correct answer: B

Question 45: The discount factor allows us to value:

A) Helps to achieve maximum returns over long term

B) long-term reward more than short term reward

C) short-term reward more than long-term ones

D) None of the above

Correct answer: C

Question 46: Which of the following hypotheses hold under Efficient Market Hypothesis?

A) EMH implies that it is impossible to predict perfectly future
returns

B) EMH implies that prices must incorporate all existing information

C) EMH implies that prices vary with no clear reason

D) EMH implies that prices do not fluctuate

Correct answer: B

Question 47: In order to reduce risk while maximizing returns, portfolios often allocate stocks based upon _____ correlation in the short term and _____ correlation in the long term.

A) negative, positive

B) zero, positive

C) positive, positive

D) zero, zero

Correct answer: A

Question 48: In order to reduce risk while maximizing returns, portfolios often allocate stocks based upon _____ correlation in the short term and _____ correlation in the long term.

A) negative, positive

B) zero, positive

C) positive, positive

D) zero, zero

Correct answer: A

Question 49: For Grinold's Fundamental Law, what is Information Ratio (performance) similar to?

A) Volatility

B) Sharpe Ratio

C) Cumulative Return

D) Daily Return

Correct answer: B

Question 50: Which of the following is an issue when we buy or sell stocks with most significant price changes?

A) Certainty of price change

B) Determining an entry position

C) Both A and B

D) None of the above

Correct answer: A

Correct answer: B

Correct answer: B

Question 51: It is currently debatable whether the stock market is efficient or not (if the efficient market hypothesis is correct). How do you expect this to change in the future?

A) New investors enter the market every day, I expect market efficiency to decline in the future, as there will be more noise in the market.

B) Sophisticated investors and institutions still rely heavily on human decision making. I expect market efficiency to increase in the future. As more institutions adopt computer-automated and systematic trading systems, a fair-market price equilibrium should be reached in shorter time.

C) The stock market is perfectly efficient, and it will remain that way.

D) The stock market is entirely inefficient, and will remain that way.

Question 52: Which statements is FALSE about "The Big Short"?

A) A Collateralized debt obligation (CDO) can be made up of different types of assets and loans.

B) Many Mortgage-Backed Securities (MBS) are also Collateralized debt obligations (CDOs).

C) AAA tranches have higher risks than BBB tranches.

D) Michael Burry made profits by purchasing Credit default swaps (CDS) from the banks and these banks paid him the full amount of the bond when the Mortgage-Backed Security (MBS) defaulted.

Correct answer: C

Question 53: What is Information Ratio?

A) Sharpe Ratio of the Portfolio

B) Mean of the excess return

C) Market return plus excess return

D) Sharpe Ratio of the excess return

Correct answer: D

Question 54: Which statements is FALSE about "The Big Short"?

A) A Collateralized debt obligation (CDO) can be made up of different types of assets and loans.

B) Many Mortgage-Backed Securities (MBS) are also Collateralized debt obligations (CDOs).

C) AAA tranches have higher risks than BBB tranches.

D) Michael Burry made profits by purchasing Credit default swaps (CDS) from the banks and these banks paid him the full amount of the bond when the Mortgage-Backed Securities (MBS) defaulted.

Correct answer: C

Question 55: You are using Dyna-Q to learn a policy to help with trading a new mutual fund. You only have a few days to trade before you need to cash out for other reasons. To model this time constraint do you:

A) Use a high alpha (learning rate) so that you learn your policy quickly.

B) Use a low lambda (discount rate) because you value later rewards less.

C) Use fewer hallucination cycles so that you have more time to trade.

D) Use a smaller set of training data to mimic the small time frame you will have to trade.

Question 56: Assume beta represents the market return and alpha represents the residual return. Which answer below exactly contains the factors that Information Ratio is related to?

A) std(beta), std(alpha), mean(alpha)

B) mean(beta), std(beta), std(alpha)

C) mean(beta), std(beta)

D) mean(alpha), std(alpha)

Correct answer: D

Question 57: What is the correct sequence for the cycle describing the RL problem?

A) Analyze, Remember, Act

B) Sense, Think, Act

C) Think, Sense, Act

D) Remember, Act, Analyze,

Correct answer: B

Question 58: According to the movie, what happened in the second quarter of '07 that caused mortgage defaults to skyrocket?

A) The adjustable rates on the mortgages kicked in

B) The Federal Reserve raised interest rates

C) Banks began issuing synthetic CDOs

D) Lehman Brothers and Bear Stearns collapsed

Correct answer: A

Question 59: Which of the following methods is NOT a valid way of solving a reinforcement learning problem?

A) Transition Iteration

B) Value Iteration

C) Q-Learning

D) Policy Iteration

Correct answer: A

Question 60: Which of the following are characteristics of technical analysis? i. price of stock ii. value of a company iii. volume of stock traded

A) i only

B) i andii

C) i andiii

D) i, ii, and iii

Correct answer: C

Question 61: Which of the following are not assumptions of the Efficient Markets Hypothesis?

A) New Information arrives randomly

B) Small number of investors

C) Prices adjust quickly

D) Prices reflect all available information

Correct answer: B

Question 62: Which of the following is true about Markov Chain problems ?

A) The sum of all the next states in reward function is 1.

B) The sum of the all the next states in transition function is 1.

C) The sum of all the next states in set S is 1.

D) The sum of all the next action in set A is 1.

Correct answer: B

Question 63: Why is a good idea to create a portfolio that combines assets with negative correlations?

A) To get more "alpha" than any individual asset

B) To maximize returns by shorting stocks

C) To reduce portfolio volatility

D) To balance weights equally among all assets

Correct answer: C

Question 64: Reinforcement learning algorithm tries to (select one that applies)

A) Find a policy pi that minimizes Transition function.

B) Find a policy pi that minimizes Reward function.

C) Find a policy pi that maximizes Transition function.

D) Find a policy pi that maximizes Reward function.

Correct answer: D

Question 65: Which of the following choices is not an assumption made by the Efficient Market Hypothesis?

A) There are a large number of investors

B) Prices adjust quickly

C) Prices reflect all available information

D) The market can be beaten by efficient trading practices

Correct answer: D

Question 66: The goal for reinforcement learning is to find a Policy PI that maps a state to an action that we should take and its goal is to find this pi such that it maximizes some future sum of the reward. Which of the following is the way that we calculate discount reward? Suppose n is a finite number, $0 < \lambda < 1$, and r_i is the reward for the ith action.

A) $\sum_{i=1}^{Inf} r_i$

B) $\sum_{i=1}^{n} r_i$

C) $\sum_{i=1}^{Inf} \lambda^{i-1} r_i$

D) $\sum_{i=1}^{n} \lambda^{i-1} r_i$

Correct answer: C

Question 67: To assess weights for portfolio that minimizes risk using Mean Variance Optimization technique, what are the inputs required ?

A) Expected Return, Volatility, Covariance, Target return

B) Expected Return, Volatility, Standard Deviation, Target return

C) Momentum, Volatility, Standard Deviation, Mean

D) Bollinger bands, Volatility, Standard Deviation, Target return

Correct answer: A

Question 68: According to EMH, what type of analysis/analyses could provide excess returns for the semi-strong form?

A) Technical Analysis

B) Fundamental Analysis

C) A and B

D) Neither A or B

Correct answer: D

Question 69: Which of the following did Mark Baum (owner of Front Point Partners) do in the movie?

A) Open up to his wife about his brother

B) Sell his swaps when Venett could not convince him to buy more

C) Discover that the rating agencies would correct the ratings for subprime mortgages

D) Meet with an acquaintance from Moody's

Correct answer: A

Question 70: Stock options can increase the _____ of a portfolio, as the investor can keep more cash on hand up to the expiration date.

A) value

B) leverage

C) riskiness

D) stability

Correct answer: B

Question 71: In the movie The Big Short, what does finally convince Mark Baum to start buying credit default swaps on mortgages?

A) When Jared Vennet explained the problem using a Jenga tower

B) After talking to Michael Burry over his findings on Mortgage bonds

C) After investigating neighborhoods and people getting multiple mortgages

D) When he talked to rating agencies about how they rated CDOs

Correct answer: C

Question 72: In the movie "The Big Short ", hedge fund manager Michael Burry discovers that the United States housing market is extremely unstable. Therefore, he decides to take a short position against the United States housing market. Which option is correct about shorting?

A) You always win money when taking short position.

B) Short sellers borrow shares of stock that they do not own and sell those shares at the current market price.

C) Short sellers sell shares of stock that they own and sell those shares at the current market price.

D) Short sellers borrow shares of stock that they do not own and sell those shares at the lower current market price.

Question 73: What is the root cause of 2008 financial crisis?

A) hedge fund trading with derivatives

B) increase in mortgage interest rate

C) increase in oil price

D) decrease in unemployment rate

Correct answer: A

Question 74: Identify the FALSE statement about the components that make up a Markov Decision Problem.

A) States -a finite set of states that the process can occupy at a current time

B) Actions -a finite set of actions that can be enacted given a state

C) Observations -events observed that are by-products of the current state of the process

D) Rewards -the motivation given for transitioning from the current state to the next state

Correct answer: C

Question 75: Please select statements that are True:

A) In Markov decision tree process the reward from applying action to the current state depends on the previous states and previous actions that were taken by the agent

B) The end goal of the Markov decision problem is to find a policy that maximizes total rewards

C) Agent can only receive one type of a reward at a time: either an immediate reward or a discounted future reward

D) Transition function maps sets of actions into sets of rewards

Correct answer: B

Question 76: Which of these metrics are not used in the Bollinger Band calculation introduced in lecture?

A) Standard Deviation

B) Momentum

C) Simple Moving Average

D) Price

Correct answer: B

Question 77: The current market price of XYZ is $ per share. An investor plan to purchase 1 XYZ 50 calls with $2 premium per share and 1 XYZ 50 puts with $2 premium per share. What is the breakeven points of this purchase:

A) 46 and52

B) 48 and54

C) 46 and54

D) 48 and52

Correct answer: C

Question 78: Suppose you use a butterfly strategy: buy a 105 call at 7.16 and a 115 call at 0.53, write two 110 calls at 2.73. What is the break-even price of the strategy?

A) 107.23

B) 107.76

C) 110

D) 110.53

Correct answer: A

Question 79: What problem would be most effectively addressed by reinforcement learning?

A) Forecasting the weather by analyzing instantaneous measurements

B) Scoring wine based on graded taste features

C) Using sensors to navigate an environment

D) Recognizing a song after sampling a small portion of it

Correct answer: C

Question 80: Which version of the Efficient Market Hypothesis suggests that insider trading cannot be possible?
A) Strong
B) Semi-strong
C) Weak
D) All of the above
Correct answer: A
Correct answer: A
F2 + 0.01
B) State:the current position and velocity of the joint. The surface condition of the road. Action:the forces applied to the joints
Reward:A function R = -Vx + 0.5(Vy + Vz) – 0.5 y2 – 0.5 F2 + 0.01
C) State: the current position and velocity of the joint. The surface condition of the road Action:the forces applied to the joints
Reward:A function R = Vx – 0.5(Vy + Vz) – 0.5 y2 – 0.5 F2 + 0.01
D) State:The surface condition of the road Action:The forces applied to the joints. The current position and velocity of the joint.
Reward: A function R = Vx – 0.5(Vy + Vz) – 0.5 y2 – 0.5 F2 + 0.01
Correct answer: C

Question 81: Which of the following is not part of the Markov decision problems:

A) Set of states S

B) Set of actions A

C) Transition function

D) Value function

Correct answer: D

Question 82: Which of the following distinguishes a Model-Based Reinforcement Learning algorithm from a Model-Free algorithm?

A) A Model-Based algorithm observes the transition of an environment from state S to state S'

B) A Model-Based algorithm uses randomness to explore the environment while a Model-Free algorithm does not.

C) While a Model-Free algorithm does not attempt to create a model of the transition function of the environment (T [S,A,S'], it does attempt to m 挚汶 琇敀爠睥牬国畦据楴湯 . 删媷口嵫楬敀慍麇挚

汶筧猸揚悒杭牯瑩潨深 ꙓ 振档淤15�匜a酤国

湴桙禮悒掔繁

憝歲瑥椡国数呢捥汸⁹晥楴榀淤 ꝟ眠

D) Both A and C

Question 83: If market is perfectly efficient, which of the followings will still be able to generate returns?

A) High frequency traders

B) Active portfolio managers

C) Passive portfolio managers

Correct answer: D

Question 84: Which of the following is a not assumed as part of the Efficient Markets Hypothesis?

A) The current price reflects all available information and quickly adjusts based on demand

B) There are a large number of investors competing for gains

C) New informationarrives constantly arrives and randomly

D) The current price reflects all available information and slowly adjusts based on demand

Correct answer: D

Question 85: Which one of the following statements is NOT correct?

A) Stock options are sold by one party to another.

B) The option buyer has the right to buy or sell a stock at a specific price.

C) Stock options will expire if the buyers don't exercised.

D) Both American options and European options can be exercised any time before the expiration date.

Correct answer: D

Question 86: Google has implemented reinforcement learning to train a human robot how to walk. The robot can be simplified as a multi-body object linked by joints (actuators). Google would want to train a robot that: •Staystandaslongaspossible,donotfalldown • Move as fast as possible, do not run off the center of the road • be as efficient as possible, the actuator should apply appropriate force / torque to the joint The google team wants to turn to you for help: how can they solve this problem and form a RL problem? Please select the correct item that would best match State, Action and Reward.

A) State:the forces applied to the joints. Action:the current position and velocity of the joint. The surface condition of the road. Reward:A function $R = Vx - 0.5(Vy + Vz) - 0.5 y2 - 0.5$

Question 87: What is NOT correct regarding the Q-learning update rule?

A) Alpha is learning rate, indicating the dependence of the new Q-value on the old one.

B) We need to find the action that maximize the Q-value among all possible actions when calculating new Q-value.

C) Discount and immediate reward of both past and future actions should be considered when calculating new Q-value.

D) The discount factor is used to reduce the value of future rewards.

Correct answer: C

Question 88: If you believe in the weak form version of the Efficient Market Hypothesis, which of the following would you NOT be likely to consider valuable information?

A) Stock volatility over the last month

B) Insider knowledge of an impending CEO change

C) The book value of the company

D) Earnings report contents

Correct answer: A

Question 89: The lowest possible Sharpe ratio of a portfolio that contains at least two stocks is:

A) higher than the lowest Sharpe ratio of any one stock in the
portfolio

B) equal to the lowest Sharpe ratio of any one stock in the portfolio

C) lower than the lowest Sharpe ratio of any one stock in the
portfolio

D) none of the above

Correct answer: C

Question 90: The Fundamental Law of Portfolio management states which of the following:

A) Portfolio performance increases as skill increases

B) Portfolio performance increases as trading opportunities
increases

C) High portfolio performance can only be guaranteed through
diversification

D) Both (A) and (B)

Correct answer: D

Question 91: The goal of reinforcement learning is to find the optimal policy. What are possible outputs of a policy function?

A) A single action that should be taken next when in a particular state

B) A probability distribution over a set of actions

C) A and B

D) None of the above

Correct answer: C

Question 92: If two portfolio managers have the same investment skills, which one you would prefer?

A) The one who works in a famous company of the world's top 500, but with limited invest opportunities.

B) The one who works in a very small company, but have many opportunities to invest

C) Both are good candidates due to the same investment skills

D) Above answers are wrong due to the lack of further information

Correct answer: B

Question 93: If two portfolio managers have the same investment skills, which one you would prefer?

A) The one who works in a famous company of the world's top 500, but with limited invest opportunities.

B) The one who works in a very small company, but have many opportunities to invest

C) Both are good candidates due to the same investment skills

D) Above answers are wrong due to the lack of further information

Correct answer: B

Question 94: About Q-learning, which statement is wrong?

A) Q-learning is a reinforcement learning technique used in machine learning.

B) The goal of Q-learning is to learn a policy.

C) It is designed to make future rewards worth more than immediate rewards.

D) State and action are two key elements in Q-learning.

Correct answer: C

Question 95: Suppose your best friends is a CEO of a company, and you could always acquire the latest inside information of this company. But one day you find that you could NOT use this advantage to make profits. Which of the following statements about the efficient market hypothesis (EMH) is supported by your experience?

A) The weak version of EMH is valid.

B) The semi-strong version of EMH is valid.

C) The strong version of EMH is valid.

D) None of above

Correct answer: C

Question 96: Technical Analysis is most effective for...

A) Making complex trading decisions

B) Analyzing cash flow and book value

C) Making simple trading decisions

D) Making long-term trading decisions

Correct answer: C

Question 97: Which of the following can be inferred by the weak form of the Efficient Market Hypothesis?

A) Future prices of AAPL cannot be predicted by analyzing historical prices.

B) Prices of AAPL will adjust rapidly to any new information about the company.

C) Prices of AAPL reflect all knowledge about the company, public and private.

D) Future prices for AAPL can be predicted accurately by analyzing historic prices.

Correct answer: A

Question 98: When thinking about trading stocks as a Reinforcement Learning problem. Which choice is defined as an action?

A) Buy

B) Holding Long

C) Daily Returns

D) Bollinger Value

Correct answer: A

Question 99: Increase in SMA(Simple Moving Average) over a period of time indicates:

A) Increase in volatility of the stock for the time period

B) Decrease in Stock price for the time period

C) Increase in the Stock price for the time period

D) No Change in stock price

Correct answer: C

Question 100: Which of the following are states in a trading reinforcement learning problem? (Looking for an S)

A) Buying

B) Holding Long

C) Leverage

D) Cumulative Return

Correct answer: B

"inliers".

D) Simple Linear Regression on the Principal Components of the

Liquid Instruments

Correct answer: A

"inliers".

D) Simple Linear Regression on the Principal Components of the

Liquid Instruments

Correct answer: A

Correct answer: C

Question 101: What is considered a major benefit of exchange-traded stock options?

A) The premium can be refunded at any time before the expiration date

B) The loss is capped to the premium

Correct answer: B

Question 102: Say DIS stock is currently trading at $50 per share. Now we purchase one call option contract (100 shares) on DIS with a $70 strike and at a price of $5.00 per contract. Please select the correct description below:

A) In the U.S. We can only exercise the option on the expiration date

B) The cost of buying the option is $500

C) If we exercise the option when the stock price is $70, the actual profit will be $2000

D) We will make a profit if exercise the option when the stock price goes up to $60

Correct answer: B

Question 103: How will information ratio change if adding additional cash to the portfolio?

A) No effect.

B) The information ratio will increase.

C) The information ratio will decrease.

D) The effect depends on market conditions.

Correct answer: C

Question 104: Which of the following is true for trading with Bollinger Bands?

A) Large breakouts often occur after periods of low volatility when the bands contract.

B) No breakouts usually occur after periods of low volatility when the bands contract.

C) Bearish breakouts often occur after periods of low volatility when the bands contract.

D) Bullish breakouts often occur after periods of low volatility when the bands contract.

Correct answer: A

Question 105: Stock A and stock B each gives a 12% annual return. Daily returns standard deviation of stock A is 0.0027 and stock B is 0.0031. If you have $100 which one of below 4 option s would be the best investment strategy to invest the $100?

A) $55 in Stock A, $45 in Stock B

B) $100 in Stock B

C) $45 in Stock A, $55 in Stock B

D) $100 in Stock A

Correct answer: D

Question 106: You have 30 candidate liquid driver symbols e.g. SPY, XLE, XLF etc. You believe there exists a linear relationship between those 30 liquid instruments' returns and an illiquid instrument's returns e.g. SNOW: $r\_SNOW = \Beta\_SPY * r\_SPY + \Beta\_XLE * r\_XLE + \Beta\_XLF * r\_XLF + \cdots$. However, you believe the relationship is sparse i.e. most Betas are zero. Which of the following regression techniques would produce a sparse linear relationship? Hint: Think about how a penalty behaves when the Beta is small.

A) Lasso Regression i.e. penalize the absolute value of each
regressor's beta

B) Ridge Regression i.e. penalize the square of each regressor's beta

C) RANSAC i.e. fit a simple linear model from random subsets of

Question 107: You have 30 candidate liquid driver symbols e.g. SPY, XLE, XLF etc. You believe there exists a linear relationship between those 30 liquid instruments' returns and an illiquid instrument's returns e.g. SNOW: $r\_SNOW = \Beta\_SPY * r\_SPY + \Beta\_XLE * r\_XLE + \Beta\_XLF * r\_XLF + \cdots$. However, you believe the relationship is sparse i.e. most Betas are zero. Which of the following regression techniques would produce a sparse linear relationship? Hint: Think about how a penalty behaves when the Beta is small.

A) Lasso Regression i.e. penalize the absolute value of each
regressor's beta

B) Ridge Regression i.e. penalize the square of each regressor's beta

C) RANSAC i.e. fit a simple linear model from random subsets of

Question 108: What does the housing crisis suggest about the Efficient Market Hypothesis?

A) It corroborates the EMH because certain hedge funds were able to short the housing market using data collected from mortgage data.

B) Market bubbles don't exist. The Economy is perfect. Everything is always fine.

C) It contradicts the EMH because information relevant to the crash was not reflected in housing market share prices.

D) It corroborates the EMH because the crash could have been easily predicted from the available stock price information.

Question 109: Assume you bought 100 buy option calls at $110 strike price of AAPL stock, which takes $300 as the premium. The stock price moved from $115 to $120. What is the maximum return available?

A) 10000

B) 300

C) 9700

D) none of above

Correct answer: C

Question 110: Which of the below statements is most correct about Dyna?

A) Dyna utilizes a model-free based method.

B) Dyna utilizes a model-based method.

C) A and B.

D) None of the above.

Correct answer: C

Question 111: According to portfolio optimization and the efficient frontier, what is defined as "Risk"?

A) Volatility between two stocks

B) Standard deviation of historical daily returns

C) Standard deviation of historical yearly returns

D) When the total market cap of a company is higher than its book value, it is "risky"

Correct answer: B

Question 112: Which of the following statement about efficient market assumptions is FALSE?

A) Prices are driven by small groups of wall street hedge funds with efficient algorithms.

B) Price adjust quickly.

C) New information arrives randomly and transparently.

D) Neither technical nor fundamental analysis can produce risk-adjusted excess returns under efficient market assumptions.

Correct answer: A

Question 113: Which of the following statement about efficient market assumptions is FALSE?

A) Prices are driven by small groups of wall street hedge funds with
efficient algorithms.

B) Price adjust quickly.

C) New information arrives randomly and transparently.

D) Neither technical nor fundamental analysis can produce risk-
adjusted excess returns under efficient market assumptions.

Correct answer: A

Question 114: If the weak form of the EMH is correct then

A) Technical analysis will be success (prediction the future price

based on historical price and volume data)

B) Technical analysis cannot succeed

C) Fundamental analysis cannot work

D) B and C

Correct answer: B

Question 115: What are the two components of taking action a in state s for Q[s, a]?

A) maximum reward, minimum reward

B) immediate reward, discounted reward

C) long reward, short reward

D) call reward, put reward

Correct answer: B

Question 116: What is the most important factor to make a less volatile portfolio for the combinations of several stocks?

A) Average price of stocks

B) Covariance of stocks

C) Average daily return of stocks

D) Standard deviation of daily return of stocks

Correct answer: B

Question 117: A portfolio can lie above the efficient frontier.

A) Correct, the efficient frontier represents the highest risk portfolio for a given level of return.

B) Correct, the efficient frontier represents the lowest risk portfolio for a given level of return.

C) Incorrect, the efficient frontier represents the highest risk portfolio for a given level of return.

D) Incorrect, the efficient frontier represents the lowest risk portfolio for a given level of return.

Correct answer: D

Question 118: Select one that has options on besides stocks:

A) Commodities

B) Insurance

C) House

Correct answer: A

Question 119: Which one of the following sentences is true for the efficient market hypothesis?

A) There are four forms of the EMH: weak, semi, semi-strong and
strong

B) If the EMH is correct then hedge fund managers cannot succeed

C) Since all the hedge fund managers can identify similar
opportunities they have to act on these ASAP.

D) All of the above

Question 120: The assumption that prices will adjust rapidly to new public information represents which form of the Efficient Markets Hypothesis?

A) Weak

B) Semi-strong

C) Strong

D) Quick

Correct answer: B

Correct answer: C

Correct answer: A

Question 121: What is risk?

A) standard deviation of historical daily return

B) covariance of historical daily return

C) inverse of sharp ratio

D) geometric average rate of logarithmic of annual return

Correct answer: A

Question 122: Your friend has been monitoring the market, waiting for a good time to buy some GOOGL. Which of the following is the best technical indicator to move forward with the purchase?

A) Prices have been increasing for a few days and just hit the higher Bollinger Bond.

B) Prices have been increasing for a few days and just hit the lower Bollinger Bond.

C) GOOGL announces earnings, which was more than expectations.

D) GOOGL announces earnings, which was less than expectations.

Correct answer: B

Question 123: Does policy guarantee to converge? If it converges, does the optimal policy generates optimal value function?

A) Yes, Yes

B) Yes, No

C) No, Yes

D) No, No

Correct answer: A

Question 124: Based solely on the foregoing prices, how would you best describe the relationship between Stock A and Stock B? Date (dd/mm/yyyy) Stock A Price Stock B Price 1. 02/05/2018

$50.00 $32.21   2.   05/007/05/2018

$50.24 $30.74 5. 23/05/2018

5/2018 $32.73 $53.24

$51.09 4. 12/05/2018 $30.50

$31.98 3. $53.19

A)

B)

C) D)

Positively   correlated   Negatively correlated Insufficient data to detNo correlation

ermine correlation

Correct answer: B

Question 125: Which of the following schema is model free?

A) Policy Iteration

B) Value Iteration

C) Q Learning

D) Decision Tree

Correct answer: C

Question 126: Which of the following was NOT a contributing factor to the housing crisis in the movie The Big Short?

A) FEMA unable pay insurance claims for damage to homes due to a very high cost of natural disasters in preceding years.

B) Banks intentionally lending to lower quality borrowers to continue issuing many home loans.

C) The belief that a position of a combined large number of high risk mortgage securities (strength in numbers) will result in an overall very low risk position in the long term.

D) Too many people taking out mortgages to purchase homes that they couldn't afford.

Question 127: Which of the statement of Q-learning below is False?

A) The agents job is to maximize cumulative reward.

B) Q-learning does not require a model of the environment and can handle problems with stochastic transitions and rewards.

C) Agents actions affect the subsequent data it receives.

D) The learning rate determines the importance of future rewards.

Correct answer: D

Question 128: Which one of the statements below is correct considering moving average?

A) A moving average helps remove daily fluctuation from analysis.

B) The shorter the time period under consideration, the easier it is to predict long-term trends.

C) The longer the time period under consideration, the more sensitive the moving average is towards daily volatility.

D) A moving average is always computed using the same arithmetic model.

Correct answer: A

Question 129: In Q-Learning an experience tuple is denoted by . What do the variables s, a, s' and r stand for?

A) s = initial state, a = action, s' = new state, r = risk

B) s = initial state, a = action, s' = new state, r = reward

C) s = new state, a = action, s' = initial state, r = reward

D) s = initial state, a = alpha value, s' = new state, r = risk

Correct answer: B

Question 130: As illustrated in the plot of the movie "The Big Short," which of the following are contributors for the housing market collapse of 2008:

A) increasing amounts of sub-prime home loans awarded to unqualified buyers

B) the repackaging of sub-prime mortgages into CDOs which obscured their inherent risk

C) incorrect (possibly fraudulent) ratings for mortgage-backed securities/CDOs from the major credit rating agencies

D) all of the above

Correct answer: D

Question 131: When trying to increase performance according to the Fundamental Law, in general, which is easier to increase: skill or breadth?

A) Skill

B) Breadth

Correct answer: B

Question 132: Information Ratio IR is the Sharpe Ratio of:

A) Excess Daily Return

B) Cumulative Return

C) Average Daily Return

D) Benchmark Return

Correct answer: A

Question 133: If a portfolio manager's skill remains constant(IC) and to improve the overall performance(IR) of portfolio by 5 times, using the fundamental law how much should the number of trades increase by?

A) 5 times
B) 25 times
C) 10 times
D) 100 times

Correct answer: B

Question 134: For the update rule of Q table, a higher value of alpha and a higher value of gamma indicate which of the following?

A) The previous value of Q is preserved less; The learning process is less quickly; The later rewards are valued more

B) The previous value of Q is preserved more; The learning process is less quickly; The immediate rewards are valued less

C) The previous value of Q is preserved less; The learning process is more quickly; The later rewards are valued more

D) The previous value of Q is preserved less; The learning process is more quickly; The later rewards are valued less

Correct answer: C

Question 135: For a portfolio consisting of two stocks, what kind of correlation between the stocks minimizes the volatility or risk of the portfolio?

A) Positive correlation (i.e. near +1 correlation)

B) Correlation does not affect portfolio risk, only covariance.

C) No correlation (i.e. near 0 correlation)

D) Negative correlation (i.e. near -1 correlation)

Correct answer: D

Question 136: Which is NOT the assumption of efficient markets hypothesis?

A) Price does not reflect all available information

B) Large number of investors in the market

C) New information is constantly arriving

D) Price adjust quickly

Correct answer: A

Question 137: Which form of the Efficient Market Hypothesis states that stock prices are affected by ONLY the past price information.

A) Weak

B) Semi-strong

C) Strong

D) All of the above.

Correct answer: A

Question 138: What is the name of the way hedge fund manager Michael Burry shorts the US housing market?

A) Collateralized Debt Obligation

B) Credit Default Swap

C) Stop-Limit Order

D) Mortgage-Backed Security

Correct answer: B

Question 139: According to the movie "the big short", which of the following is right?

A) Modern mortgage bonds are graded. A grade bonds have less risks than B and C.

B) "The big short" shorted American house market with CDS (Credit Default Swap).

C) LTV (Loan-To-Value Ratio) is usually at around 80% and should remain below 100%.

D) Adjustable-rate mortages offer flexible payment option and are good for house buyers.

Correct answer: B

Question 140: Andrey Markov was a Russian mathematician that created the concept of stochastic process modeling that we now call the Markov decision process (MDP). In the mathematics of MDPs, S normally represents the possible states, A represents the possible actions that can be taken, and R represents the rewards. What does π represent?

A) The optimal policy
B) The current estimate of the policy
C) The optimal value of the state
D) The current estimate of value at that state

Correct answer: B

Question 141: Consider three different funds that increase by 10% over a trial period. Fund A holds 1 stock, Fund B holds 2 stocks that are anti-correlated, and Fund C holds 2 stocks that are positively correlated. Which fund carries the least risk?

A) Fund A

B) Fund B

C) Fund C

D) Fund B and Fund C carry equivalently low risk.

Correct answer: B

Question 142: Which of the following is false when thinking of a market as a reinforcement problem?

A) Selling is a state

B) Market is the Environment

C) Price is a state

D) Market feature is a state

Correct answer: A

Question 143: Which of the following is not an Efficient Market Hypothesis assumption?

A) There are a large number of investors interacting in the market for profit.

B) New information arrives randomly.

C) Current price reflects all available information.

D) Single stocks often outperform the market.

Correct answer: D

Question 144: how does Bollinger band predict the price of the stock?

A) the price of the stock is bracketed by an upper and lower band

along with a 21-day simple moving average.

B) the price of the stock is the same as simple moving average.

C) average price of the stock of the same day.

D) the difference of upper band and lower band.

Correct answer: A

Question 145: The information coefficient (IC) of a manager is 0.2 . The manager makes monthly bets on 27 stocks. What is the information ratio(IR) (or performance) of the manager?

A) 0.6 * sqrt(3)

B) 5.4

C) 0.45 * sqrt(3)

D) 3.6

Correct answer: D

Question 146: The equation for Grinold's Fundamental Law of Active Portfolio Management is:

A) Information Ratio (IR) = Information Coefficient (IC) * sqrt(Breadth)

B) Information Ratio (IR) = Information Coefficient (IC) * Breadth

C) Information Coefficient (IC) = Information Ratio (IR) * sqrt(Breadth)

D) Information Coefficient (IC) = Information Ratio (IR) * Breadth

Correct answer: A

Question 147: how does Bollinger band predict the price of the stock?

A) the price of the stock is bracketed by an upper and lower band

along with a 21-day simple moving average.

B) the price of the stock is the same as simple moving average.

C) average price of the stock of the same day.

D) the difference of upper band and lower band.

Correct answer: A

Question 148: What portfolios lie on the efficient frontier?

A) The portfolios with the highest Sharpe ratio

B) The lowest risk portfolios for each level of return

C) The highest return portfolios for each level of Sharpe ratio

D) The portfolios with the lower risk

Correct answer: B

Question 149: What was the type of the derivative contracts used by the main characters in the film The Big Short?

A) Collateralized Debt Obligations

B) Credit Default Swaps

C) Mortgage-Backed Security

D) Adjustable-Rate Mortgages

Correct answer: B

Question 150: Consider trading as a reinforcement learning problem. Which of the following defines the state of the environment of the trading problem?

A) Buy

B) Sell

C) Return from trade

D) Bollinger Value

Correct answer: D

Question 151: Which of the following is true about the Efficient Market Hypothesis?

A) There are a small number of investors

B) New information arrives randomly

C) Prices adjust slowly

D) prices don't reflect all available information

Correct answer: B

Question 152: Using the principles behind portfolio optimization what is one element we should be considering in order to minimise our portfolio risk if our portfolio consists of two stocks?

A) Ensure the co-variance between the two stocks is positive

B) Ensure that the standard deviation of the stock prices is minimal

C) Ensure that the co-variance between the two stocks is negative

D) Use the air speed of an unladen swallow to determine portfolio percentage.

Correct answer: C

Question 153: If a call option is far 'out of the money' the value of the option will be:

A) Equal to the value of a put option with the same exercise price

B) Greater than the value of a put option with the same exercise price

C) Less than the value of a put option with the same exercise price

D) None of the above is correct

Correct answer: C

Question 154: What is a Synthetic CDO?

A) CDO of defaulted mortgages

B) CDO of triple-A rated bonds

C) CDO of bets placed based on the performance of other assets

D) CDO of treasury bonds

Correct answer: C

Question 155: If your reward function outputs positive values for correct answers and zero for incorrect answers, what could be causing a wrong policy after training?

A) Not having a balanced number of training instances for each state.

B) Using a recursive function for policy learning.

C) The reward function should only output positive values.

D) All of the above are correct.

Correct answer: A

Question 156: Consider 5 stocks A, B, C, D and E, each having a daily return of 10%. Following is their covariance matrix : A B C D E A 1 0.9 -0.9 -0.9 -0.9 B 0.9 1 -0.9 -0.9 -0.9 C -0.9 -0.9 1 0.9 0.9 D -0.9 -0.9 0.9 1 0.9 E -0.9 -0.9 0.9 0.9 1 Which of the following would be most optimal portfolio?

A) 20%A,20%B,20%C,20%D,20%E

B) 25% A, 25% B, 16.6% C, 16.6% D, 16.6% E

C) 33.3% C, 33.3% D, 33.3% E

D) 50%A,50%B

Correct answer: B

Question 157: What is the semi-strong form of Efficient Markets Hypothesis?

A) Tells us that an asset's price reflects all publicly available info

B) Tells us that an asset's price reflects all public and private info available

C) Tells us that an asset's price reflects past trading volumes and corresponding prices

Correct answer: A

Question 158: What does breadth refer to in the Fundamental law of active portfolio management ?

A) Breadth of investor's expertise

B) Investor's Skill level

C) Number of trades / Opportunities that the investor has access to

D) A and C

Correct answer: C

Question 159: In which trading horizon is fundamental analysis more valuable than technical analysis?

A) Days

B) Milliseconds

C) Years

D) All of the above

Correct answer: C

Question 160: An option that can be exercised profitably for the holder is said to be ____; otherwise, it is _____.

A) out of the money; in the money

B) in the money; out of the money

C) a tax liability; speculative bet

D) covered call; naked call

Correct answer: B

Question 161: Which of these is NOT input to Mean-Variance Optimization?

A) Expected Return

B) Volatility

C) Covariance

D) Risk

Correct answer: D

Question 162: What's the different steps required to define a Reinforcement Learning problem?

A) Set of states (S), Set of actions (A), Transition function (T), Reward function (R)

B) Set of states (S), Set of actions (A), Transition function (T), Reward function (R), Policy (π)

C) Transition function (T), Reward function (R)

D) Set of states (S), Set of actions (A)

Correct answer: B

Question 163: Which of the following is NOT TRUE in the Fundamental Law

A) information ratio is related to the beta component of the return of a portfolio

B) performance is measured as information ratio

C) breadth is related to number of trades

D) performance = skill * sqrt(breadth)

Correct answer: A

Question 164: Which of the following is true about weak form of EMH:

A) There is no type of information that can give an investor an advantage on the market.

B) Ones cannot predict future stock prices on the basis of past stock prices.

C) Ones cannot predict future stock prices on the basis of all information, future product launches, R&D Developments.

D) Both A and B.

Correct answer: B

Question 165: According to the semi-strong form of Efficient Market Hypothesis, people who invest in stocks of a company after the company releases very positive news concerning the stock can expect to earn a/an

A) Normal return because the stock will be fairly priced when
bought.

B) Loss because things are usually not what they seem.

C) Zero return because the next price of stock is expected to be the
same as the last price.

D) Very high return because the new information will not affect the stock price until later.

Correct answer: A

Question 166: Consider stocks A, B, C. A and B have a positive covariance of 0.8, B and C have a negative covariance of -0.8. Which of the following allocations would have minimum risk, but achieves target returns?

A) A: 0.5 B: 0.5 C: 0.0

B) A: 0.0 B: 0.5 C: 0.5

C) A: 0.25 B: 0.25 C: 0.5

D) A: 0.5 B: 0.25 C: 0.25

Correct answer: C

Question 167: REQUIRED IMAGE: https://imgur.com/0TLM8HE Use the figure linked above to answer the following question: Let this chart represent the efficient frontier for some portfolio, the minimum return denoted by the green line, and the maximum risk by the red line. Which of these portfolio(s) are considered "acceptable"?
A) a,b,andd
B) b and c
C) d and a
D) b
Correct answer: D

Question 168: What are the 'layers' of a mortgage bond called (i.e. AAA, BBB, etc.)?

A) Levels

B) Tranches

C) Properties

D) Pools

Correct answer: B

Question 169: Which of the following isn't an input to Mean Variance Optimization?

A) Volatility

B) Expected Returns

C) Sharpe Ratio

D) Covariance

Correct answer: C

Question 170: John creates a portfolio of assets performing above the efficient frontier. What does this mean?

A) His portfolio is optimal.

B) His portfolio is suboptimal.

C) His portfolio is superoptimal.

D) His portfolio is not possible.

Correct answer: D

Question 171: Which of the following is a characterization of the Efficient Markets Hypothesis?

A) Markets efficiently incorporate all public information, which consequently renders beating the market impossible.

B) The stock market in the U.S. outperforms every other stock market in the world.

C) Stocks earn a higher return than bonds, because they are riskier investments.

D) The Efficient Markets Corporation should be included in the S&P500 index.

Correct answer: A

Question 172: How many shares are typically included in an options contract?

A) 10

B) 50

C) 100

D) 1000

Correct answer: C

Question 173: What is a symptom of "mania" as described in the movie The Big Short?

A) Negative public sentiment

B) A rapid rise in complexity and rates of fraud

C) Bullish market sentiment

D) Sudden downward spikes in security prices

Correct answer: B

Question 174: As you increase the "lookback" period from 5 days to 100 days, how will the line representing the simple moving average (SMA) change?

A) It will likely become more "staggered" looking, with many more highs and lows

B) It will likely become "smoother" looking, with fewer highs and lows.

C) It will become indistinguishable from the price line.

D) It depends on the stock, there is not enough information to tell.

Correct answer: B

Question 175: What is the equation for Grinold's Fundamental Law?

A) performance = skill * sqrt(breadth)

B) performance = breadth * sqrt(skill)

C) breadth = skill * sqrt(performance)

D) performance = skill * breadth^2

Correct answer: A

Question 176: Based on the Fundamental Law of active portfolio management, Information Ration (IR) can be identified as:

A) The correlation of the manager's forecast on actual returns.

B) The beta of the portfolio times the return on the market for that day.

C) The sharpe ratio of excess return.

D) The average of the historic daily values of alpha over the average of the historic daily values of beta for a portfolio.

Correct answer: C

Question 177: Which choice will increase the information ratio the most?

A) Increase information coefficient by 0.1

B) Increase information coefficient by 600

C) Increase breadth by 300

D) Increase breadth by 500

Correct answer: D

Question 178: In regard to QLearning, which of the following in terms of reward results in faster convergence?

A) r = daily return

B) r = 0 until exit, then cumulative return

C) None of the above

D) Both A and B are correct

Correct answer: A

Question 179: If you think that you can beat the market using only prior trading data, you believe that

A) The market is inefficient and the weak form of the efficient market hypothesis is false.

B) The market is efficient and the weak form of the efficient market hypothesis is true.

C) The market is inefficient and the strong form of the efficient market hypothesis is false.

D) The market is efficient and the strong form of the efficient market hypothesis is true.

Question 180: What is the correct order of building a Q-Learning model:

(1) define combined states, actions, rewards (2) choose in-sample training period (3) iterate and update the Q-table (4) implementing backtesting

A) (1) (2) (3) (4)

B) (1) (3) (2) (4)

C) (3) (1) (2) (4)

D) (2) (1) (4) (3)

Correct answer: A

Correct answer: A

Correct answer: B

Question 181: What makes reinforcement learning different from other

Question 189: If the semi-strong efficient market hypothesis were proven true, which of the following would remain reliably profitable trading strategies?

A) Investing in a hedge fund with a high alpha

B) Trading based on insider information (and getting away with it)

C) Building a trading stategy based on past price movements

D) Quickly identifing good and bad news concerning an asset and trading it accordingly

Question 182: According to the lectures, which of these is NOT an input to machine learning paradigms? mean-variance Optimization?

A) There is no supervisor, only a reward signal A) Expected return

B) Feedback is instantaneous

B) Volatility

C) Time does not matters

C) Covariance

D) Agent's actions do not affect the subsequent data it receives

D) Asset weights

Correct answer: A Correct answer: D

Question 184: According to lectures, which of these is NOT one of the four inputs for mean-variance optimization?

A) Target return

B) Expected Return

C) Covariance

D) Asset Weights

Correct answer: D

Question 183: Information which is reflected in current market prices with help of past price movements is classified as

A) weak form efficiency

B) semi strong form efficiency

C) strong form efficiency

D) market efficiency

Correct answer: A

Question 186: The CEO of a credit rating agency learns from his CTO that their databases were breached by attackers in a massive attack, but the knowledge has not been made public yet. He tells his family to SHORT his company's stock before the press conference to announce the breach. Under which form(s) of the Efficient Markets Hypothesis will this yield results for his family?

A) Strong form

B) Strong and Semi-strong forms

C) Semi-strong and Weak forms

D) Semi-strong form

Correct answer: C

Question 185: Which of the following cannot be used for technical analysis?

A) intrinsic value

B) percent bollinger

C) Simple Moving Average Of Price

D) percent change in volumne

Correct answer: B

Question 188: Which of the following statements about Q-Learning and Dyna is TRUE?

A) Q-Learning is guaranteed to converge to the optimal policy

B) Q-Learning is a greedy algorithm

C) Q-Learning will converge faster using long-term rewards instead of short-term rewards

D) Dyna is useful for speeding up runtime

Correct answer: A

Question 187: The fundamental law states that in order to increase the performance(IR), breadth and information coefficient will have what effect?

A) If increasing the breadth component by two times the current BR, the IR will increase by two times

B) If increasing the breadth component by four times the current BR, the IR will increase by two times

C) If increasing the information coefficient by two times the current IC, the IR will increase by four times

D) If increasing the information coefficient by four times the current IC, the IR will increase by four times

Question 190: When is Technical Analysis effective? Choose correct answers.

A) Works better over longer time periods than shorter time periods

B) To look for contrasts (stock vs market)

C) Combinations for multiple indicators are weaker

D) Individual indicators are strong

Correct answer: B

Question 191: Which factor of the Fundamental Law is easiest to improve?

A) Performance

B) Skill

C) Breadth

D) Information Coefficient

Correct answer: C

Question 192: From the fundamental law, which will show the best performance?

A) High skill, high breadth

B) High skill, low breadth

C) low skill, low breadth

D) low skill, high breadth

Correct answer: A

Question 193: When is Technical Analysis effective? Choose correct answers.

A) Works better over longer time periods than shorter time periods

B) To look for contrasts (stock vs market)

C) Combinations for multiple indicators are weaker

D) Individual indicators are strong

Correct answer: B

Question 194: Which of the following statements about Q learning is true?

A) A low value of alpha means that previous Q value is more strongly preserved.

B) A low value of alpha means that new Q value is more strongly preserved.

C) A low value of gamma means that we value later rewards very significantly

D) None of the above

Correct answer: A

Question 195: In the Coin Flip Casino problem, the risk-adjusted reward in a multi bet scenario is given by:

A) sqrt(SR_single)*sqr(BR)

B) sqr(SR_single)*sqrt(BR)

C) SR_single*sqrt(BR)

D) SR_single*sqr(BR)

Correct answer: C

Question 196: Price to earnings ratios show persistent correlation with long-term annualized returns on stocks. This data appears to refute:

A) weak form of Efficient Market Hypothesis (EMH)

B) Semi-strong form of EMH

C) Both (a) and (b)

D) No versions of EMH, as it is already priced into stock values

Correct answer: B

Question 197: Q -Select the statement which is TRUE regarding using RL for market trading?

A) We can use the policy iteration algorithm to find the optimum policy because our transition matrix is well defined.

B) We can use the value iteration algorithm to find the optimum policy because our reward function is well defined.

C) We can look at previous transitions and use a model to form an optimum policy.

D) If we know the reward discount rate (denoted by gamma), we can use the value-iteration algorithm to find the optimal policy.

Correct answer: C

Question 198: Reinforcement Learning can be applied for trading in the following context

A) Predict Future Price of a Stock

B) Use as a Price Indicator

C) Predict whether to Buy or Sell

D) Its only for beating Games like Go

Correct answer: C

Question 199: What are the 3 variants of the efficient-market hypothesis?

A) Weak, semi-strong, strong

B) Weak, average, strong

C) Unrelated, weak, strong

D) Unrelated, semi-strong, strong

Correct answer: A

Question 200: Q -Which statement is TRUE regarding using Reinforcement Learning for market trading?

A) We can use the policy iteration algorithm to find the optimum policy as our transition matrix is well defined.

B) We can use the value iteration algorithm to find the optimum policy as our reward function is well defined.

C) We can look at previous transitions and use a model to form an optimum policy.

D) If we know the reward discount rate (denoted by gamma), we can use the value-iteration algorithm to find the optimal policy.

Correct answer: C

D) Prices Reflect all Available Information -- since I as an investor have this fundamental information and have not made an investment choice, this cannot be true

Correct answer: B

Question 201: Which one of the following information would hold us back(not encourage) from applying Technical Analysis for a stock?

A) Current price of the stock & price movements discounts everything

i.e. prices fully reflect all the information

B) Performance of annual, quarterly reports (earnings, employee costs, development costs)

C) Information on percentage change in volume of stocks since

beginning

D) Price correlation information of the stock with market

Correct answer: B

Question 202: What changes in the 1970's led up to the 2008 financial crises?

A) Federal Reserve dropped interest rates and higher inflation

B) Mortgage-backed securities were created

C) Oil prices increased created higher costs globally

D) Wall Street and Banks regulations were relaxed by the federal goverment

Correct answer: B

Question 203: What do Synthetic CDOs (Collateralized Debt Obligation) primarily invest in?

A) Real estate equity

B) Mortgage Bonds

C) Housing property

D) Credit default swaps

Correct answer: D

Question 204: Alice's portfolio has the same mean performance alpha, as well as the same volatility as Bob's portfolio. Alice makes 4 trades per year and Bob makes 64 trades per year. Comparing each of their skill levels in making trades we can say that:

A) Alice is 4 times more skillful than Bob

B) Alice is 16 times more skillful than Bob

C) Bob is 4 times more skillful than Alice

D) Alice and Bob have the same skill level

Correct answer: A

Question 205: Which of the following is FALSE based on The Fundamental Law applied to active portfolio management?

A) Sharpe Ratio grows faster as breadth increases (relative to skill)

B) Higher alpha generates a higher Sharpe Ratio

C) More trading opportunities provides a higher Sharpe Ratio

D) Sharpe Ratio grows faster as skill increases (relative to breadth)

Correct answer: A

Question 206: Which form of the Efficient Market Hypothesis prevents profiting from Technical Analysis?

A) Weak

B) Weak & Semi-Strong

C) Semi-Strong & Strong

D) Weak & Semi-Strong & Strong

Correct answer: D

Question 207: Which of the following statements is FALSE about discounted reward?

A) The closer gamma is to 1, the less we value rewards in the future.

B) The closer gamma is to 0, the less we value rewards in the future.

C) If the gamma=1, then the equation is the same as infinite horizon.

D) Gamma is a value from 0.0 to 1.0

Correct answer: A

Question 208: Which Efficient Market Hypothesis assumption does not lead to prohibiting fundamental information for making investment decisions?

A) Large Number of Investors --since the fundamental information is known to everyone the number of investors does not affect how the information is used

B) New Information arrives Randomly --since the fundamental information is released at regular intervals to everyone, there is not randomness in how information arrives

C) Prices Adjust Quickly --since the fundamental information is broad knowledge about the company, it does not matter how quickly the price changes

Question 209: Which of the following is NOT assumed by the efficient market hypothesis?

A) There is a large number of investors participating in the market.

B) New information arrives predictably.

C) A stocks price quickly adjust to any new information.

D) A stocks current price reflects all information about that stock.

Correct answer: B

Question 210: Alice's portfolio has the same mean performance alpha, as well as the same volatility as Bob's portfolio. Alice makes 4 trades per year and Bob makes 64 trades per year. Comparing their skill levels in making trades, we can say that:

A) Alice is 4 times more skillful than Bob

B) Alice is 16 times more skillful than Bob

C) Alice and Bob have the same skill level

D) Bob is 4 times more skillful than Alice

Correct answer: A

D) At the maturity date, that is 18 months from now, you have the right, but not the obligation to sell 100 shares of IBM Corporation for $170 per share.

Correct answer: A

Question 211: When trying to maximize reward in reinforcement learning, what formulation is not valid?
A) infinite horizon
B) Markov decision
C) finite horizon
D) discounted reward
Correct answer: B

Question 212: Information Ratio according to Grinolds Fundamental Law is

A) IR = IC x sqrt(Breadth)

B) IR = sqrt(IC x Breadth)

C) IR = IC x Breadth

D) IR = sqrt(IC) x Breadth

Correct answer: A

Question 213: When normalizing technical indicators, you divide by:

A) the mean

B) the standard deviation

C) the value on day 1

D) the sum of all values

Correct answer: B

Question 214: Consider a European call option for 100 shares of IBM Corporation, whose strike price is $170 per share and which matures 18 months from now. What does this option entitle you to do?

A) At the maturity date, that is 18 months from now, you have the right, but not the obligation to purchase 100 shares of IBM Corporation for $170 per share.

B) Between now and 18 months from now, you are entitled to make a phone call to the European headquarters of IBM Corporation to inquire about the value of 100 shares of IBM.

C) Between now and 18 months from now, you have the right, but not the obligation to purchase 100 shares of IBM Corporation for $170 per share.

Question 215: When mapping trade to RL, which of these is not considered a state?

A) Bollinger Value

B) Holding a Stock

C) Selling a Stock

D) Daily Return from the stock

Correct answer: C

Question 216: Grinold's Fundamental Law seeks to mathematically relate which facets of investing?

A) Performance and Skill

B) Risk and Diversification

C) Performance, Skill, and Breadth

D) Risk, Returns, and Breadth

Correct answer: C

Question 217: Given two active investors with two different information ratios. Investor A has an Information Coefficient of 0.02 and executes 1000 independent trades a year. Investor B has an IC of 0.05 and executes 100 trades a year. Which investor is expected to have the highest IR based on the Fundamental Law.

A) Investor A

B) Investor B

C) They have the same

D) We cannot tell

Correct answer: A

Question 218: Technical analysis considers the intrinsic value of a company:

A) False

B) True

Correct answer: A

Question 219: If given a choice for the frequency that time-series reward values are evaluated by a Q-Learner, which would result in the fastest convergence?

A) Rewards evaluated at the end of each day

B) Rewards evaluated at the end of each year

C) Rewards evaluated at the end of each second

D) Rewards evaluated at the end of the sample period

Correct answer: C

Question 220: According to the Efficient Market Hypothesis (EMH) a stock can deviate from its fair value market price if it is undervalued or overvalued. Please mark True or False.

A) True

B) False

Correct answer: B

Correct answer: C

Question 221: According to the Fundamental Law of Active Portfolio Management, the information coefficient is defined as:

A) the standard deviation of theoretical returns divided by actual returns

B) the number of trading opportunities presented to a portfolio manager over time

C) the correlation of portfolio manager's prediction about asset's price with their actual future prices

D) the amount of information gained about a given asset

Correct answer: C

Question 222: In the Q-Learning algorithm assume we are in the second iteration with an experience tuple. List down the correct sequence of the below given steps to be followed to make sure we correctly update our Q table 1 Information we just learned is taken to improve Q 2 Observe reward and s' 3 State s is computed 4 Q table is set with small random numbers and the time is initialized 5 We consult our policy, or in other words we consult Q to find the best action in the current state

A) 45321
B) 34512
C) 43521
D) 35421

Question 223: T/F: Grinold's Fundamental Law applies to passive portfolio management

A) True

B) False

Correct answer: B

Question 224: When trading strategy is represented as a reinforcement learning problem, the "reward" parameter represents what value?

A) The exponential weighted average of the previous 21 trading
days.

B) The return on our investment.

C) The standard deviation of daily returns so far.

D) The Sharpe Ratio.

Correct answer: B

Question 225: One of the variables for the fundamental law is the skill of investor in selecting securities. How does this investor increase this variable?

A) Increase his breadth of knowledge

B) Increase his width of knowledge

C) Learn outer but related markets

D) Partner up with another investor with same knowledge

Correct answer: A

Question 226: Among four strategies of options, which one's maximum loss is theoretically unlimited? Therefore, we should manage this strategy very carefully.

A) Buy Call

B) Buy Put

C) Write Call

D) Write Put

Correct answer: C

Question 227: Select the FALSE statement about technical analysis below:

A) As compared to fundamental analysis, technical analysis works better on smaller time scales

B) An example using technical analysis may take into account stock price, volume, and book value

C) Technical analysis strategies are highly utilized in Hedge Funds

D) Sharpe ratio, price momentum, and Bollinger Band position would all be considered indicators in technical analysis

Correct answer: B

Question 228: Tom bought 1 option for AAPL of which the strike price is $110. The price of this option is $5. Suppose before the expiration date, the stock price of AAPL went up to $120 and Tom decided to exercise his options, and then sell the stocks at the $120 position immediately. What is the profit from this series of trades made by Tom? Assume no extra fees such as commissions.

A) $500

B) $5

C) $1000

D) $995

Correct answer: A

Question 229: Current stock price for IBM is $115/share and custom A buy a option $110 with 2.75 for December 10th. If IBM stock price drops to $110/share on that day, how much will customer A lose?

A) 11500

B) 11000

C) 775

D) 275

Correct answer: D

Question 230: Current stock price for IBM is $115/share and custom A buy an option $110 with 2.75 for December 10th. If IBM stock price drops to $110/share on that day, how much will customer A lose?

A) 11500

B) 11000

C) 775

D) 275

Correct answer: D

Question 231: It is best to select a portfolio along the efficient frontier because:

A) It results in a portfolio with negligible risk for a given return

B) It results in a portfolio optimized for maximum return for a given risk

C) It results in a portfolio that is blended and equally weighs risk and return

D) It results in a portfolio that is built to be further optimized by a learner

Correct answer: B

Question 232: Which of the following is NOT a component that defines a Markov Decision Problem.

A) Set of Actions A

B) Probabilistic Function P

C) Transition Function T

D) Set of States S

Correct answer: B

Question 233: Which of these is NOT a correct way of representing the Transition function (T) for a Markov Decision Problem (MDP)

A) T(s)

B) T(s,π)

C) T(s,a)

Correct answer: B

Question 234: You write a call for APPL at a strike price of 112 dollars and a Last value of 1.55. At the option's expiry the price of APPL is valued at 114. Assuming that the option was exercised, what was your profit/loss?

A) -45

B) 45

C) 200

D) -200

Correct answer: A

Question 235: The weak version of Efficient Market Hypothesis prohibits us from profiting from fundamental analysis because it says that prices adjust quickly to new public information such as company's quarterly reports.

A) True

B) False

C) Insufficient information

D) Depends on circumstances

Correct answer: B

Question 236: Suppose you want to blend 3 stocks in your portfolio. ABC, LMN, XYZ are the stocks. ABC has a -0.9 covariance with LMN. LMN has a +0.9 covariance with XYZ. What is the best blend of these stocks to minimize portfolio risk?

A) ABC 50%, LMN 25%, XYZ 25%

B) ABC 25%, LMN 25%, XYX 50%

C) ABC 33%, LMN 33%, XYZ 33%

D) ABC 10%, LMN 10%, XYZ 80%

Correct answer: A

Question 237: What are the two components to the Q function in Q-learning?

A) immediate reward and discounted reward

B) ventured path and frontier states

C) transitions T and rewards R

D) utility function and Bollinger bands

Correct answer: A

Question 238: If the efficient markets hypothesis is true, then stock prices _____ and returns are _____.

A) fluctuate randomly, evenly distributed

B) fluctuate randomly, normally distributed

C) do not fluctuate, evenly distributed

D) do not fluctuate, normally distributed

Correct answer: B

Question 239: 1) "Amazing Birds", a pet birds chain which primarily sells macaws. 2) "Royal Chicken Burgers", a burger food main, as their name suggests 99% of there menu have on chicken as its main ingredients. 3) "Get Proteins" a Broiler chicken chain. are three hypothetical companies, the stock price of all these companies goes down after the news of an outbreak of Avian flu also known as Birds flu across the globe, what kind of information is this?

A) Endogenous
B) Fundamental
C) Insider
D) Exogenous

Question 240: An employee of a company buys 500 shares of the company stock before a major product announcement. Then the price of the stock goes up. Which one of the following assumptions are true?

A) Weak efficient market hypothesis has proved right

B) Strong efficient market hypothesis has proved wrong

C) Strong efficient market hypothesis has proved right

D) Both A and B

Correct answer: B

Question 241: What is credit default swap?

A) A credit default swap is a financial swap agreement that the seller of the CDS will compensate the buyer in the event of a debt default

B) A credit default swap is a financial swap agreement that the buyer of the CDS will compensate the seller in the event of a debt default

Correct answer: A

Question 242: Which of the following statements is FALSE with respect to the EMH(Efficient Markets Hypothesis)?

A) We can profit by building a portfolio based off of insider
information.

B) Fundamental analysis will not aid in building a profitable portfolio.

C) Analysis of historical prices cannot lead to profit.

D) Prices adjust rapidly to new public information.

Correct answer: A

Question 243: Which of the following analyses would become unsuccessful if the form of EMH switch from semi-strong to strong?

A) Technical

B) Fundamental

C) Insider

D) None of the above

Correct answer: C

Question 244: When considering a Reinforcement Learning problem, ALL of the following TRUE, EXCEPT:

A) 'S' is the series of all previous states that led to our current state

B) Our policy, π, takes in a state 'S' and outputs an action 'a'

C) Action 'a' is taken in the environment and the environment then transitions to a new state

D) Reward 'r' for taking a certain action helps the learner arrive at the optimal policy

Correct answer: A

Question 245: According to the Fundamental Law of Active Portfolio Management, if the information coefficient is measured at 0.001, how many trades need to be executed in a year in order to attain 40% performance?

A) 160,000
B) 40,000
C) 4,000,000
D) 1,600,000,000

Correct answer: A

Question 246: Which of the following is NOT true about the Fundamental Law of Active Portfolio Management?

A) To double performance at the same level of skill, one must find four times as many opportunities to trade.

B) Breadth is defined as the number of shares held in a portfolio over the course of a given year.

C) The information ratio measures one's ability to generate excess returns relative to a benchmark.

D) Two ways to increase the breadth of a portfolio are to hold more assets at once or to turn those equities over more frequently.

Correct answer: B

Question 247: Which of the following is an example of a model-free approach to reinforcement learning?

A) Value iteration

B) Policy iteration

C) Q-learning

D) Linear regression

Correct answer: C

Question 248: Which component is not in the reinforcement learning?

A) Rewards

B) Actions

C) Velocity

D) States

Correct answer: C

Question 249: Which of following statement is not true about the efficient frontier?

A) The efficient frontier represents the optimal portfolio with lowest risk given the target return

B) There is no possible portfolio that can never exceed the efficient frontier (have better performance)

C) The risk may be higher even though the target return is reduced.

D) Each tangent line of efficient frontier represents the maximum sharp ratio given the target return

Correct answer: D

Question 250: As we move along the efficient frontier towards the origin, is it possible that we get lower return but higher risk?

A) Yes

B) No

Correct answer: B

Question 251: We want the value of one particular future reward to be 5 after 3 steps (i=3) instead of its immediate reward value of 20 at time = 0. What should our discount rate be?

A) 0.25

B) 0.5

C) -0.25

D) $(.25)^{1/3}$

Correct answer: B

Question 252: The goal of an Reinforcement Learning algorithm is to find a policy that maps a policy state to an action such that the future sum of the reward is maximized

A) This statement is true

B) This statement is false

Correct answer: A

Question 253: In following items, which one is NOT a technical analysis indicator?

A) Relative Strength Index

B) Money Flow Index

C) Return on Equity

D) Price Rate Of Change

Correct answer: C

Question 254: Which one of these is not a value used to evaluate a portfolio?

A) Cumulative Return

B) Volatility

C) Adjusted Closing Price

D) Sharpe Ratio

Correct answer: C

Question 255: If you have built a learner for trading stocks. To increase the Information Ratio, you want:

A) Adjust your Information Coefficient to an optimal value

B) Decrease the number of trading opportunities

C) Improve the prediction skills of the learner

D) Decrease the correlation between forecasts and returns

Correct answer: C

Question 256: What is CDO-square?

A) A CDO with a leverage of 2

B) A CDO backed primarily by the tranches issued by other CDOs

C) A type of structured asset-backed security (ABS) based on S&P500

D) A CDO that earns by shorting other CDOs

Correct answer: B

Question 257: Which of the following statements about technical analysis is not true?

A) Technical analysis is most useful for shorter time periods

B) Technical analysis Includes price data only

C) Technical analysis performs better considering multiple indicators

D) Technical analysis is useful in detecting deviation of a stock from the market

Correct answer: B

Question 258: Which of the following statement about Q-Learning is true?

A) Q-Learning uses models of rewards, state and actions.

B) Q-Learning is guaranteed to converge towards the optimal solutions.

C) Q-Learning is a model free approach.

D) Q-Learning can only be applied to domains where all states and transitions are fully defined.

Correct answer: C

Question 259: If Person A's Information Coefficient is 20 times higher than Person B's, then how much higher than Person A does Person B's Breadth of the portfolio need to be in order to match Person A's investments?

A) 200 times

B) 50 times

C) 400 times

D) 100 times

Correct answer: C

Question 260: Which of following statement is true when we compare reinforcement learning with supervised learning ?

A) Input is not available in reinforcement learning while it is available in supervised learning

B) Output is available in supervised learning while it is not available in reinforcement learning

C) Exploitation or exploration are part of supervised learning

D) In Reinforcement Learning, the goal is to learn the general formula from the given examples by analyzing the given inputs and outputs of a function

Correct answer: B

Correct answer: D

Correct answer: B

Question 261: What serves as feedback from the environment in a RL problem?

A) action

B) reward

C) state

D) policy

Correct answer: B

Question 262: What does 'shorting the banks' mean?

A) lending in an area, such as the housing market, all while expecting the borrowers to default on their loans

B) Another term for Reinforcement Learning

C) lending in an area, such as the housing market, all while expecting the borrowers to pay their loans on time

D) Closing down banks that do not follow government rules

Correct answer: A

Question 263: Which of the following statements about the efficient frontier is NOT true?

A) Different points on the efficient frontier have different levels of risk and return.

B) Points on the efficient frontier are the portfolio allocation with the lowest risk for a given return value.

C) Points below the efficient frontier represent suboptimal portfolio allocations.

D) Investors should target portfolios at or above the efficient frontier because the efficient frontier represents portfolios that provide the minimally adequate return for a given level of risk.

Question 264: If the standard deviation of alpha values for a portfolio increases by a factor of 4 (and the mean alpha is unchanged), what will happen to the information ratio (IR) for the portfolio?

A) It will increase by 4 times

B) It will increase by 2 times

C) It will decrease by 4 times

D) It will decrease by 2 times

Correct answer: C

Question 265: Which one is/are least expensive environment is used in Dyna ?

A) Real environment

B) Simulated environment

C) Both real and simulated are equally expensive

D) None of the above

Correct answer: B

Question 266: Which of the following is NOT a characteristic of any version (weak, semi-strong, strong) of the Efficient Market Hypothesis?

A) Can make money on insider information, as it can be leveraged

B) Future prices cannot be predicted by analysis of historical/past prices

C) Public reports cause instantaneous changes in price

D) Prices adjust immediately to new public information

Correct answer: A

Question 267: Which of the following best describes the given or initially known information in a general reinforcement learning approach?

A) A set of inputs labeled with outputs

B) A set of inputs without labels to outputs

C) A set of all possible states and a set of possible actions from each state

D) A set of all possible states, a set of possible actions from each state, the transition function, and the reward function

Correct answer: C

Question 268: Which of the following is a limitation of the Efficient Frontier?

A) Asset returns do not follow a normal distribution

B) It is not possible to balance securities efficiently

C) The degree of risk is too high for the market

D) Assets do not follow a heavy-tailed distribution

Correct answer: A

Question 269: Which option below is not a right description of the different form of EMH?

A) Weak EMH means future prices CANNOT be predicted by historical (no technical)

B) Semi-Strong EMH means prices adjust slowly (no fundamental and technical)

C) Semi-Strong EMH means prices adjust rapidly (no fundamental and technical)

D) Strong EMH means prices reflect all info (public and private) (no insider, technical, or fundamental)

Question 270: What is incorrect according to Efficient Markets Hypothesis (EMH)?

A) The weak form of the EMH suggests that future asset prices cannot be predicted based on historical price data alone.

B) Technical analysis can be used in weak form of EMH because some market inefficiencies can be exploited

C) The semi-strong form of the EMH suggests that fundamental and technical analysis are of little use because opportunities have been arbitraged away immediately.

D) The strong form of the EMH suggests that no known arbitrage opportunities exist.

Correct answer: B

Question 271: Stock for JPM is: $200 on 2010-10-01 $400 on 2010-1002 $400 on 2010-10-03 $100 on 2010-10-04 $700 on 2010-10-05 Calculate the simple moving average for the stock on 2010-10-04 with a lookback window of 3 days. Also, assuming the price at 2010-10-04 is a large enough excursion from the SMA, would you consider this a buy or sell opportunity?

A) -2/3 buy

B) -2/3 sell

C) 1/3 sell

D) 1/3 buy

Correct answer: A

Question 272: Where did Michael Burry work?

A) Scion Capital

B) Goldman Sachs

C) Morgan Stanley

D) Merrill Lynch

Correct answer: A

Question 273: Which components are required to build an experience tuple to be used to find the policy in reinforcement learning?

Correct answer: A

Question 274: Select the version of EMH for which the following statement holds true: "Future asset prices cannot be predicted using historical price and volume data. "

A) Semi-strong form

B) Weak form

C) Strong form

D) None of the above

Correct answer: B

Question 275: If a stock's price was $50.00 10 days ago and is $45.00 now, what is the value of the 10-day momentum for this stock?

A) 0.9

B) -0.1

C) 1.1

D) 0.1

Correct answer: B

Question 276: Given two trade strategies with the same expected return (reward), trade strategy A involves a single trade with a Sharpe Ratio of 0.15, while trade strategy B involves 144 trades over a one-year period. What is the Sharpe Ratio of trade strategy B?

A) 55.8

B) 1.8

C) 0.06

D) 2.87

Correct answer: B

Question 277: Which of the following statement is false on The Fundamental Law?

A) Information Ratio (IR) is a measure of manager's performance

B) Information Coefficient (IC) is correlation between manager's prediction of the market and actual market.

C) Breadth (BR) is the number of trading opportunity per day

D) IR = IC * sqrt(BR)

Correct answer: C

Question 278: The subprime lending industry ...

A) attracted sleazy people

B) was fragmented

C) was a fast-buck business

D) all of the above

Correct answer: D

Question 279: If you are 1/100 as smart as Warren Buffet, and he trades 100 times per year, how many times do you need to trade per year in order to get the same risk adjusted reward?

A) 100

B) 100^2

C) 100^3

D) 100^4

Correct answer: C

Question 280: Investor A has an Information Coefficient of .25 and a Breadth of 144 Investor B averages 3% return above the market and the standard deviation of these excess returns is 1% Select the correct statement comparing the information ratio of the two investors.

A) IR of investor A > IR of investor B

B) IR of investor A < IR of investor B

C) IR of investor A = IR of investor B

D) Not enough information

Correct answer: C

Correct answer: A

Question 281: Given the following closing prices for AAPL, what was the SMA (simple moving average) for the previous five days on Nov 7? Date Closing Price Oct 29 $5 Oct 30 $6 Oct 31 $4 Nov1$5 Nov2$8 Nov5$7 Nov6$8 Nov7$10 Nov8 $11 Nov9 $9

A) 7.6

B) 6

C) 6.4

D) 9

Correct answer: C

Question 282: Jason bought an European call option with exercise price of 100 dollars for stock A, when it expires the stock price is 80 dollars.

A) Jason can make profit by shorting the stock at 100 dollars

B) Jason will lose money by 20 dollar per share

C) Jason will not lose or make money

D) Jason can cut the loss by reselling the option

Correct answer: C

Question 283: What is the wrong statement about the fundamental law?

A) Higher expected return generates a higher sharpe ratio

B) More execution opportunities provides a higher sharpe ratio

C) Sharpe ratio grows as the square of breadth

D) Information ratio is a sharpe ratio of excess return

Correct answer: C

Question 284: Which Iteration method in reinforcement learning starts with random policy ?

A) Policy Iteration

B) Value Iteration

C) Q -learning

D) Both a&b

Correct answer: A

Question 285: The film The Big Short covers the financial crisis of 20072008 caused by defaults on mortgage backed debt securities. What is the highest credit rating given to debt securities?

A) High-grade

B) AAA

C) AA+

D) Investment-grade

Correct answer: B

Question 286: Which of the following statements best describes a CDO (Collateralized Debt Obligation)

A) A structured financial product that pools together assets such as loans or mortgages, and repackages this asset pool into securities that can be sold to investors.

B) In a restaurant, CDOs is a Seafood stew that is prepared using
unsold old fish

C) CDOs are mortgage bonds that are at a risk of default.

D) CDOs are swaps are insurance policies against non payment or
debt defaults. The buyer of such swaps will be entitled to settlement payment specified in the contract should the issuer default on payments.

Question 287: Which of the following is NOT true about reinforcement learning :

A) It is concerned with goal-directed learning and decision-making

B) It learns from experience by interacting with the environment but not affecting it

C) It can trade off suboptimal near term rewards to maximize a long term goal

D) An agent interacts with environment using states, actions and rewards

Correct answer: B

Question 288: What form of the EMH says future prices cannot be predicted by analyzing historical prices?

A) Weak

B) Semi-strong

C) Strong

D) None of the above

Correct answer: A

Question 289: Which of the following option operations has an unlimited potential loss?

A) BUY CALL

B) BUY PUT

C) WRITE CALL

D) WRITE PUT

Correct answer: C

Question 290: Which of the following statements about the fundamental law is true?

A) IC measures the skill of the Portfolio Manager

B) IR is the same as Sharpe Ratio

C) Breadth is irrelevant in a Buy and Hold trading strategy

D) IR measures the skill of the Portfolio Manager

Correct answer: D

Question 291: According to the movie, "The Big Short", and Michael Burry, what would trigger the collapse of the housing market:

A) The rise in variable interest rates

B) Slowed growth in the mortgage bond sector

C) People started shorting the housing market

D) World economic tensions

Correct answer: A

Question 292: Which of the following is not an RL algorithm we can use to find a good policy when mapping trading to Reinforcement Learning?

A) Q Learning

B) Value Iteration

C) Policy Iteration

D) Stock Iteration

Correct answer: D

Question 293: Which expression is the pseudocode for momentum?

A) price[t-n] – price[t]

B) (price[t]/price[t-n]) – 1

C) (price[t]/price[t-n:t].mean()) – 1

D) price[n:t].mean – price[t]

Correct answer: B

Question 294: Which of the following statements is false?

A) Model-based reinforcement learning develops a policy by looking at the data.

B) Model-based reinforcement learning can use value or policy
iteration to build a policy.

C) Q-learning is model-free reinforcement learning.

D) Transition models and reward models are used to build a policy in model-based reinforcement learning.

Correct answer: A

Question 295: Which statement best describes a mortgage bond?

A) Single big loan for a specific period of time

B) Cash collected from a pool of many individual home mortgages

C) Similar to old-fashioned government bonds

Correct answer: B

Question 296: According to the Noble Scientist Harry Markowitz, who is best known for his pioneering work in Modern Portfolio Theory, which of the following is true: (Please select one best answer):

A) Bonds are always lowest risk assets

B) Stocks are always lowest risk assets

C) Blend of Stocks and Bonds could be lowest risk assets than either
one of them individually

D) Modern Portfolio Theory shows Efficient Frontier only for Stocks as Bonds are considered risk free

Correct answer: C

Question 297: Which of these investment factors was Richard Grinold NOT trying to relate to one another with the Fundamental Law?

A) Breadth

B) Skill

C) SPY Prices

D) Performance

Correct answer: C

Question 298: Why weren't Jamie and Charlie from Cornwall Capital initially able to make large bets against credit default swaps?

A) They didn't have an ISDA (International Swaps and Derivatives Association) master agreement.

B) Their offices were located outside of New York state.

C) Their portfolio was considered small by the large Wall Street banks.

D) Both A and C.

Correct answer: D

Question 299: Why do Michael Burry's clients get upset with him?

A) Burry bought several stocks his clients disagreed with

B) Burry committed fraud and stole his clients money

C) Burry shorts the housing market

D) Burry invests in the CDO market that contributes to the instability of the housing market

Correct answer: C

Question 300: The efficient frontier is:

A) the set of optimal portfolios that offers the highest expected return for a defined level of risk or the lowest risk for a given level of expected return

B) the set of portfolios that would guarantee a no-loss bet on the market

C) how a portfolio comprising a 60/40 mix of equities and bonds would perform at various risk-free rate of return assumptions

D) the set of portfolios that satisfy a rational investor's preference for a safe and risk-adverse investment

Correct answer: A

Question 301: Which of the following may be an argument against the Efficient Market Hypothesis?

A) Looking at patterns or trends in the stock market can provide inaccurate signals to buy/sell a stock

B) A stock's value can be assessed differently by different investors and a stock's price typically takes time to respond to the market

C) Looking for situations in which the stock's price is lower than usual to buy could be disadvantageous

D) The indicators used can greatly vary the results of our approach to buy/sell stocks

Correct answer: B

Question 302: The efficient frontier is:

A) the set of optimal portfolios that offers the highest expected return for a defined level of risk or the lowest risk for a given level of expected return

B) the set of portfolios that would guarantee a no-loss bet on the market

C) how a portfolio comprising a 60/40 mix of equities and bonds would perform at various risk-free rate of return assumptions

D) the set of portfolios that satisfy a rational investor's preference for a safe and risk-adverse investment

Correct answer: A

Question 303: Which of the following assumptions regarding Efficient Markets Hypothesis is FALSE?

A) Large number of investors

B) New Information arrives randomly

C) Prices adjust slowly

D) None of the above

Correct answer: C

Question 304: A and B are two friends who have the same Information Ratio. B has an algorithm that is 5000 times better than that of A, and B trades 100 times a year. How many times does A trade in a year?

A) 250000000

B) 5000000000

C) 2500000000

D) 500000000

Correct answer: C

Question 305: Which equation is correct according to Grinold's Fundamental Law?

A) Information Ratio = Sharpe Ratio

B) Information Ratio = Information Coefficient * sqrt(Breadth)

C) Information Ratio = Information Coefficient * sqr(Breadth)

D) Information Ratio = Information Coefficient * Breadth

Correct answer: B

Question 306: As explained in the movie 'The Big Short', ____ are investments that are repackaged by small regional banks as a means of funding mortgages by reselling them as securities through investment markets. Fill in the blank from an option below:

A) Collateralized debt obligations (CDOs)

B) Mortgage-backed securities (MBS)

C) Credit-default swaps

D) Hedge Fund

Correct answer: B

Question 307: There are 2 portfolio managers: A and B. B makes 4 times the number of trades than that of A in an year. If B has a correlation of greater than 0.5 with the actual returns then what should A's correlation with actual returns be in order to outperform B

A) 1

B) 0.5

C) 0.9

D) A cannot outperform B

Correct answer: D

Question 308: Stock options are sold from one party to another, given the option buyer _____ to buy or sell a stock at a pre-agreed price within a certain period of time.

A) the right and the obligation

B) the right but not the obligation

C) not the right but the obligation

D) neither the right nor the obligation

Correct answer: B

Question 309: The point at which the tangent line from origin hits the efficient frontier gives us _____

A) Max Cumulative Return

B) Max Sharpe Ratio

C) Max Average Daily return

D) Risk free return

Correct answer: B

Question 310: The Information Ratio (IR) is the same calculation as _____, but only on the "skill" portion of the return. (Fill in the blank)

A) Bollinger Ratio

B) Sharpe Ratio

C) Standard Deviation

D) Information Coefficient

Correct answer: B

payoff.

D) Subprime adjustable rate loans were not as compelling as prime fix

rate loans to the investment bank because prime loans were the

safest mortgages issued to the least risky borrowers while subprime

loans were the exact opposite.

Correct answer: B

Correct answer: A

Question 311: Which of the following is true according to The Big Short movie?

A) Mark Baum shorted the Collateralized Debt Obligation by borrowing Mortgage Baked Securities to Deutsche Bank via Jared Vennet, selling them early at high price, buying them back after the market collapsed, and then returned them to the counterparties with some interests.

B) Charlie Geller and Jamie Shipley made money by buying Credit Default Swap, practically an insurance for Collateralized Debt Obligation they did not have.

C) Ben Rickert made more money than Michael Burry, because unlike Scion Capital, Brownfield Fund put a bet against AA's with a 200 to 1

Question 312: According to the Q function, which statements are true regarding the Learning Rate, Alpha, and the Discount Rate, Gamma?

A) The expected value of the Learning Rate, Alpha is 2.0.

B) For valuing later rewards very significantly, we expect a high value of the Discount Rate, Gamma.

C) For valuing later rewards not significantly, we expect a high value of the Discount Rate, Gamma.

D) The expected value of the Discount Rate, Gamma is < 0.0.

Correct answer: B

Question 313: Which of the following is NOT one of the assumptions EMH makes?

A) Prices adjust quickly to new information

B) Prices reflect all available information

C) New information arrives in a predictable way

D) There is a large number of investors

Correct answer: C

Question 314: The EMH has three forms. The weakest one establishes that the level of information barely affects prices. What is true about future prices given the above?

A) Future prices cannot be predicted because unpredictable external events may influence the prices.

B) Future prices can be predicted because historical prices are used as an indicator.

C) Future prices may be possible to predict based on information of price, volume and exogenous information.

D) Future prices can be predicted, however not based on fundamentals.

Question 315: Which of the following is an assumption used in the Efficient Market Hypothesis?

A) prices adjust quickly

B) number of investors is small

C) information comes from company insiders

D) new information arrives at regular intervals

Correct answer: A

Question 316: Which of the following form(s) of EMH prohibit profiting from Technical Analysis?

A) Weak EMH

B) Semi-strong EMH

C) Strong EMH

D) All

Correct answer: D

Question 317: Which of the following statements is NOT an assumption of the Efficient Market Hypothesis?

A) There are a large number of investors in the market.

B) New information arrives randomly.

C) Prices adjust slowly.

D) Prices reflect all available information.

Correct answer: C

Question 318: Which strategy expose risk of unlimited lose (if executed alone)?

A) Buy Call

B) Write Call

C) Buy Put

D) Write Put

Correct answer: B

Question 319: Which of the following can be an optional element of a Reinforcement Learning System?

A) Agent

B) Environment

C) Reward Signal

D) Model

Correct answer: D

Question 320: If stock price has gone up from 99.9 to 100.1 from yesterday to today. What kind of price movement is expected for call option of strike price 100 with same expiration date?

A) Call option price today is higher than yesterday

B) Call option price today is lower than yesterday

C) Call option price today is same as yesterday

D) It's hard to say

Correct answer: D

Correct answer: C Correct answer: A

Question 321: What are the advantages of buying simple options over stocks?

A) Cannot lose more then the premium paid up-front.

B) Expirations Dates and Ownership of the stock.

C) Leverage.

D) Both A) and C)

Correct answer: D

Question 322: Which of the following is FALSE regarding learning rate "alpha" in Q-learning?

A) A low value of alpha means that in the update rule, the previous value for Q[s,a] is more strongly preserved.

B) Learning becomes more quickly as alpha increases.

C) In a fully deterministic environment, we can consider using constant learning rate alpha = 1.

D) In a stochastic environment, we can consider using constant learning rate alpha = 0.

Correct answer: D

Question 323: If the weak form of the Efficient Market Hypothesis is true, which of the following is right?

A) Market history of a stock can be used to predict the stock's future price

B) It prohibits technical and fundamental analysis

C) The weak version is more likely to apply to the largest, most transparent and liquid markets

D) Insider trading will work for the weak form

Correct answer: D

Question 324: In Reinforcement Learning, which of the following parameter can either be a STATE or a REWARD?

A) Bollinger Value

B) Return from Trade

C) Daily Returns

D) Holding Long

Correct answer: C

Question 325: The Grinold (1989) "Fundamental Law of Active Management" asserts that the maximum attainable. Select all which are correct

A) Information Ratio is approximately the product of the Risk Coefficient times the square root of the breadth of the strategy

B) Information Ratio is directly proportional to Information Coefficient

C) Information Ratio is inversely proportional to breadth of the strategy

D) Information Ratio is inversely proportional to risk coefficient

Correct answer: B

Question 326: The movie described a synthetic collaterlized debt obligation (synthetic CDO) as a vehicle allowing $50 million in subprime loans to...

A) become perceived as a higher risk investment due to the hot hand fallacy

B) become inflated through side bets to around $1 billion

C) be shorted, allowing the investor to bet the mortgage price will decrease in the future.

D) None of the above

Correct answer: B

Question 327: Assume we have the return vs risk graph of Efficient Frontier, with Optimal CAL (Capital Allocation Line, a line from the origin to the tangent to the frontier) line added in. Which of the following is true?

A) The point where Optimal CAL line hits the Efficient Frontier represents the minimum risk portfolio for the assets.

B) The Efficient Frontier curve shows that, as we lower the return, the risk will always go down.

C) The point where Optimal CAL line hits the Efficient Frontier represents the maximum Sharpe ratio portfolio for the assets.

D) The Efficient Frontier curve only represents lowest return for each of the risks.

Question 328: Which among these is/are inconsistent with the three forms of Efficient Market Hypothesis?

A) Portfolios of stocks with low price-earnings (P/E) multiples have tended to provide higher returns than portfolios of stocks with high P/E ratios.

B) Professional money managers do not typically earn higher returns than comparable passive index strategies.

C) Market prices reflect all publicly available information concerning past trading history as well as fundamental aspects of the firm.

D) Most tests of technical analysis find that it is difficult to identify price trends that can be exploited to earn superior risk-adjusted investment returns.

Question 329: Consider the following two statements: a. Q-learning is a model-free method. b. In Q-learning, to find the maximum reward, a fixed horizon is used. State whether these are true or false. The first and second truth values in the answers below correspond to statement a and b respectively.

A) True, True
B) True, False
C) False, True
D) False, False

Correct answer: B

Question 330: What mathematical equation best describes Grinold's Fundamental Law?

A) performance = skill * sqrt(breadth)

B) performance = skill + breadth

C) performance = skill / (breadth^2)

D) performance = skill / sqrt(breadth)

Correct answer: A

Correct answer: C

Question 331: The fundamental law is represented as A)

IR = IC*SQRT(BR)

B) IR = IC*BR

C) IR = IC*BR^2

D) IR = IC*BR*SQRT(120)

Correct answer: A

Question 332: In order to ensure that assets value increases in low-risk portfolio,assets should be A:anti-correlated in short term B:positively correlated in long term.

A) A

B) B

C) Both A and B

D) None of the above

Correct answer: C

Question 333: The fundamental law is represented as A)

IR = IC * SQRT(BR)

B) IR = IC*BR

C) IR = IC*BR^2

D) IR = IC*BR*SQRT(120)

Correct answer: A

Question 334: What is the main advantage of a model-free approach like Q-Learning?

A) Q-Learning does not require look-ahead or careful weighting

B) Q-Learning can easily be applied to domains where all states and/or transitions are not fully defined

C) Q-Learning implementations are generally faster than model-bases approaches

D) Q-Learning is the best way to avoid overfitting

Correct answer: B

Question 335: The fundamental law is represented as A)

IR = IC * SQRT(BR)

B) IR = IC*BR

C) IR = IC*BR^2

D) IR = IC*BR*SQRT(120)

Correct answer: A

Question 336: In the Q-Learning algorithm assume we are in the second iteration with an experience tuple. List down the correct sequence of the below given steps to be followed to make sure we correctly update our Q table 1 Information we just learned is taken to improve Q 2 Observe reward and s' 3 State s is computed 4 Q table is set with small random numbers and the time is initialized 5 We consult our policy, or in other words we consult Q to find the best action in the current state

A) 45321
B) 34512
C) 43521
D) 35421

Question 337: A call option with a $60 strike price expires in two months and sells for $3. If the underlying stock is priced at $65 at expiration, you willgeta( )

A) $3 loss

B) $5 profit

C) $3 profit

D) $2 profit

Correct answer: D

Question 338: In Q-Learning, Q[s,a]=?

A) Behaviour reward + discounted reward

B) Future reward + immediate reward

C) Immediate reward + discounted reward

D) Future reward + behaviour reward

Correct answer: C

Question 339: Portfolio Optimization and the Efficient Frontier Question: Standard deviation of daily returns is usually used as a measure of risk. Among the options below, which one would be the best alternative way to measure risk?

A) Cumulative return

B) Momentum

C) Alpha

D) Beta -or something else like Sortino Ratio

Question 340: Why did Michael Burry close his fund after obtaining big returns?

A) He cashed in and retired with his wife

B) He brought a lawsuit against the rating agencies for fraud

C) He was bummed by ongoing litigation and audits

D) He moved to investing in gold and oil companies

Correct answer: C

Correct answer: D

need a model: a discrete Markov process.

D) both are similar methods

Correct answer: A

D) Skill(Your strategy) = (100 ^ 0.5 / (10000 * 365) ^ 0.5) * Skill(Your Strategy)

Correct answer: A

Correct answer: B

Question 341: What is one major difference between US style stock options and European style stock options?

A) US style stock options require you to exercise the option on the expiration date, whereas European allow you to exercise the option prior to the expiration date.

B) European options do not call it a strike price.

C) US style stock options allow you to exercise the option up to and including the expiration date, whereas European options only allow you to exercise the option on the expiration date.

D) None of the above.

Correct answer: C

Question 342: What is the difference in value iteration and policy iteration methods in Reinforcement Learning?

A) Value Iteration: At each iteration of evaluation of all states of your environment, you increment the value of a state depending on values of neighbour states, you do this until all your environment is covered

B) Policy Iteration: At each iteration of evaluation of all states of your environment, you increment the value of a state depending on values of neighbour states, you do this until all your environment is covered

C) Value Iteration: Evaluate the action of your process at each iteration, so that you improve your control law or policy. here you

Question 343: Supposed that you are a hedge fund manager and your fund performs really well. Your fund produces similar returns as Warren Buffet's (The Information Ratio is the same), but the strategy you use is very different from Warren Buffet. Warren Buffet holds only 100 stocks for the entire year, while you run a machine learning algorithm to trade stocks at a rate of 10000 times/ per day. Which of the following equations can illustrate the relationship between the skill of your machine learning strategy and the skill of Warren Buffet?

A) Skill(Your strategy) = (100 ^ 0.5 / (10000 * 252) ^ 0.5) * Skill(Warren Buffet)

B) Skill(Your strategy) = (100 / (10000 * 252)) * Skill(Warren Buffet)

C) Skill(Your strategy) = (100 / (10000)) * Skill(Warren Buffet)

Question 344: Which one of the statements below is correct considering moving average?

A) A moving average helps remove daily fluctuation from analysis.

B) The shorter the time period under consideration, the easier it is to predict long-term trends.

C) The longer the time period under consideration, the more sensitive the moving average is towards daily volatility.

D) A moving average is always computed using the same arithmetic model.

Correct answer: A

Question 345: Technical analysis looks at what kind of information? 1. Volume 2. Cumulative return 3. Stock price 4. Sharpe ratio

A) 1 and2

B) 1 and3

C) 2 and3

D) 2 and4

Correct answer: B

Question 346: From The Big Short, what is the hot hand fallacy?

A) Studying the housing market by going to houses is the best insight.

B) Only when banks took short positions as the housing market collapsed would those positions be valued correctly.

C) When banks couldn't sell bad bonds, they grouped them into CDOs which became AAA rated diversified investments

D) The success of the housing market indicated future success of the market.

Correct answer: D

Question 347: Which of the following statement is true? The reinforcement learning can be mapped to trading as follows:

A) S: the states of the market, A: the buy, sell, do nothing actions, T: the trades completed, R: the money made at the end of the trade

B) S: the features and indicators of the stocks, A: the buy, sell, do nothing actions, T: the market, R: the money made at the end of the trade

C) S: the available states of the robot, A: the assets currently in portfolio, T: the transition functions used to determine buy and sell actions, R: the robot used to make decisions

D) The reinforcement learning can not be mapped to trading.

Question 348: Which of the following is
NOT part of Fundamental Analysis?
A) Dividends
B) Company Earnings
C) Company Debt
D) Trading Volumne
Correct answer: D

Question 349: Which of the following is a correct way to desrcibe the Transition function T[s,a,s'] in Markov Decision Problems (MDP)?

A) probability that we are in state s' and we take action a, we get new state s

B) probability that we are in state a and we take action s, we get new state s'

C) probability that we are in state s and we take action s', we get new state a

D) probability that we are in state s and we take action a, we get new state s'

Correct answer: D

Question 350: Reinforce Learning: Which is below way to find policy doesn't belong to same group? a. Build model of transition function with parameter state, action and next state. b. Build model of reward function with parameter state and action. c. Build model of iteration all state and action to find average. d. Q-learning without model

A) Build model of transition function with parameter state, action
and next state.

B) Build model of reward function with parameter state and action.

C) Build model of iteration all state and action to find average.

D) Q-learning without model

Correct answer: D

Question 351: If I have insider information that I am able to use to make a profit off through trading, which form(s) of the Efficient Markets Hypothesis (EMH) could apply?

A) Weak form

B) Semi-strong form

C) Strong form

D) A and B

Correct answer: D

Question 352: What is the main difference between US and European style stock options?

A) Under US style, you can't choose to exercise your option prior to expiration date, but it is convenient for EU style

B) Under EU style, you can't choose to exercise your option prior to expiration date, but it is convenient for US style

C) US style option does not have a set strike price, but EU options have

D) There is no difference

Correct answer: B

Question 353: Base on the film and the real world, the crush of which type of the product in the following would give the most impact to the market?

A) MBS,Mortgage Backed Securities

B) CDS,Credit Default Swap

C) CDO, Collateralized Debt Obligations

D) CDO^2,the CDO from CDO

Correct answer: D

Question 354: Base on the film and the real world, the crush of which type of the product in the following would give the most impact to the market?

A) MBS, Mortgage Backed Securities

B) CDS,Credit Default Swap

C) CDO, Collateralized Debt Obligations

D) CDO^2,the CDO from CDO

Correct answer: D

Question 355: Which of the following best describes the factors taken into account in Technical Analysis ?

A) Technical Analysis looks only at Historical Price of the stock

B) Technical Analysis looks only at Historical Price and Volume of the stock

C) Technical Analysis looks at Book Value,Cash Flow and Dividends of the stock

D) Technical Analysis looks only at Volume of the stock

Correct answer: B

Question 356: What is an example of exogenous data for an airline stock?

A) The price of oil

B) The company's stock price

C) The company's quarterly reports

D) Private information known only to the CEO

Correct answer: A

Question 357: Mean Variance Optimization (MVO) uses a set of inputs to return a set of asset weights that minimize risk. Which of the following inputs is NOT used in the calculation of MVO?

A) Expected Return

B) Volatility

C) Sharpe Ratio

D) All of the above are used as inputs

Correct answer: C

Question 358: According to Black-Scholes Option Pricing Model, which one of the following assumptions isn't true?

A) No taxes would be applied.

B) Shares are infinitely divisible.

C) No dividends are spared.

D) Transactions costs would be applied.

Correct answer: D

Question 359: What is risk?

A) Standard deviation of historical daily returns

B) average daily returns

C) covariance of daily returns

D) mean variance optimization

Correct answer: A

Question 360: How are the stock returns for two independent (nonoverlapping) time periods related in an efficient market:

A) No correlation

B) Negative correlation

C) Positive correlation

D) Cannot be determined

Correct answer: A

Question 361: What was Burry's move after he predicted the housing market bubble?

A) He contacted the government to warn them against the coming collapse of the market

B) He contacted multiple banks to convince them that the bonds will fail and to create a credit default swap market

C) He contacted Vennett and Baum to convince them to join forces with him to profit off of the market collapse

D) He contacted his mom to let her sell her house in Miami before the prices crash

Correct answer: B

Question 367: Which of the following statement about options is NOT correct?

A) You will not lose more than the premium you paid for the option,
no matter how far it moves against you.

B) Options do not have expiration date.

C) With options, you do not own the stock.

D) When you buy options, you pay the premium immediately to
another person when you acquire the option contract.

Correct answer: B

Question 363: According to the fundamental law, which way can a manager or fund improve their performance?

A) Increase the number of trading opportunities per year

B) Decrease skill at making prediction

C) Decrease breadth

D) Increase time of trading

Correct answer: A

Question 369: What does alpha represent in the Q learning update formula? $Q'[s, a] = (1 - \alpha) \cdot Q[s, a] + \alpha \cdot (r + \gamma \cdot Q[s', \text{argmax}_{a'}(Q[s', a'])])$

A) alpha is the learning rate used to vary the weight given to old experiences compared with past Q-values

B) alpha is the learning rate used to vary the weight given to old experiences compared with future Q-values

C) alpha is the learning rate used to vary the weight given to new experiences compared with past Q-values

D) alpha is the learning rate used to vary the weight given to new experiences compared with future Q-values

Correct answer: C

Question 362: According to epsilon greedy strategy, when should we set higher epsilon rates during the training phase?

A) Beginning of the training

B) When the training starts to converge

C) When the training hasn't converged

D) At the end of the training

Correct answer: A

Question 366: The Relative Strength Index is a leading indicator.

A) True

B) False

C) Relative Strength Index is not an indicator

D) None of the above

Correct answer: A

Question 364: When writing a call option, how can you hedge against infinite maximum losses?

A) Own the underlying asset

B) Buy a call option on the same asset

C) A and B

D) None of the above

Correct answer: C

Question 368: David is a stock trading expert and he can profit significantly with only 100 trades per year. Sherry developed a high frequency trading algorithm, and her algorithm is 1/10000 as smart as David's trading strategy. For Sherry, in order to achieve one half of David's Information Ratio, how many trades must she performed each year?

A) 100,000
B) 50,000
C) 10,000,000,000
D) 2,500,000,000
Correct answer: D

Question 365: Which of the following is a model-free learning?

A) Random forest

B) KNN

C) Q-learning

D) Linear Regression

Correct answer: C

Question 370: What following portfolio statistics would not be a good state to train your q-learning algorithm on?

A) Bollinger Bands

B) SMA

C) SMA / Adjusted Close

D) Current Stock Holdings

Correct answer: B

Question 371: What is a benfit of reinforcement learning?

A) We can classify objects into different categories.

B) We can observe unknowns and assign rewards to them to reach a goal.

C) We can feed it training data and then test it on a different set.

D) None of the above.

Correct answer: B

Question 372: _____ is an example of a reward in a Reinforcement Learning trading problem.

A) short selling

B) SMA

C) cumulative return

D) RSI

Correct answer: C

Question 373: If a stock price for today is $110 and an option for $108 call was $300 for 100 shares. If you buy the option and use the option to buy 100 shares after a week when the stock price increases into $120, how much will be your benefit if you ignore trading fee?

A) 1200
B) 1000
C) 900
D) 300

Correct answer: C

Question 374: Which options strategy would be the best if you could successfully predict the market to rise sharply in a future period?

A) Buy a stock, write a call option

B) Buy a call option

C) Buy a put option

D) Butterfly

Correct answer: B

Question 375: You find a bet that you can predict accurately 55% of the time. You bet $100 dispersed over x bets of $0 or greater each. The standard deviation of the returns of making the bet that many times is 5. What is the risk adjusted reward of making these bets?

A) 2

B) 20

C) 500

D) Not enough information

Correct answer: A

Question 376: In the context of reinforcement learning, what is the daily return?

A) State

B) Reward

C) Both A and B

Correct answer: C

Question 377: You find a bet that you can predict accurately 55% of the time. You bet $100 dispersed over x bets of $0 or greater each. The standard deviation of the returns of making the bet that many times is 5. What is the risk adjusted reward of making these bets?

A) 2

B) 20

C) 500

D) Not enough information

Correct answer: A

Question 378: Which of the following is NOT TRUE about Grinold & Kahn's Fundamental Law Of Active Management?

A) The formula is derived in absence of transaction cost

B) Information Ratio(IR) is a measure of the value added per unit of risk

C) IC can be estimated a priori with precision

D) At any given level of risk, an active portfolio manager can seek to improve his productivity by increasing the number of independent bets he makes

Correct answer: C

Question 379: What financial instrument did Michael Burry (portrayed by Christian Bale) use to short the housing market?

A) Put options on Real Estate Investment Trusts

B) Short selling real estate firms

C) Credit default swaps

D) CDOs (Collateralized Debt Obligations)

Correct answer: C

Question 380: According to Grinold's simplified Fundamental Law of Active Portfolio Management, which is a possible explanation for a threefold increase in performance?

A) A nine-times increase in the Information Coefficient.

B) A nine-times increase in the number of trades.

C) A two-times increase in the Information Ratio.

D) A three-times increase in the number of trades.

Correct answer: B

Correct answer: A

Question 381: What does Q(state, action) return?

A) Next state of the system.

B) Next action to be enacted.

C) Expected future reward of the given action at given state.

D) None of the above.

Correct answer: C

Question 382: Which of the following Efficient Markets Hypothesis assumptions is false?

A) Prices reflect all available information

B) Prices adjusts quickly

C) New information arrives randomly

D) A small number of investors

Correct answer: D

Question 383: Among the following, what qualities of the trading decision would make technical analysis more valuable than fundamental analysis in reaching it?

A) HIGH decision complexity, LOW decision time

B) HIGH decision complexity, HIGH decision time

C) LOW decision complexity, HIGH decision time

D) LOW decision complexity, LOW decision time

Correct answer: D

Question 384: Which of the following is evidence against the strong Efficient Markets Hypothesis but consistent with the semi-strong Efficient Markets Hypothesis?

A) Stock prices are entirely random and unpredictable.

B) People often profit from insider trading, and as such it is illegal in the U.S.

C) Traders can profit from analysis of technical indicators only.

D) No profits can be made from only technical analysis.

Correct answer: B

Question 385: which one of the followings is not an advantage of buying options?

A) can't lose more than the premium that you paid

B) leverage to control more money

C) tie with less money

D) has an expiration date

Correct answer: D

Question 386: Which of the following factors is not considered by Grinold's Fundamental Law?

A) Performance

B) Experience

C) Skill

D) Breadth

Correct answer: B

Question 387: What is the purpose of the pi(s) function with regard to Reinforcement Learning, where s is a state?

A) It is a policy that defines the action which maximizes the reward in state s

B) It returns a random action to take for exploration

C) It returns the current reward in state s

D) It determines if s is a valid state

Correct answer: A

Question 388: In Markov Decision Problems, the transition function has three attributes. One of the attributes is the future state (s'). What is the sum of all the next states we might end up in?

A) 0

B) -1

C) 1

D) 100

Correct answer: C

Question 389: In the context of a Markov Decision Problem(MDP) when every experience tuple for an environment in the format , is known… I would use a _____ to determine _____ . However, if no knowledge of the environment exists then _____ is a viable approach to develop the policy π

A) Model Based reinforcement learning approach, T[s,a,s'] and R[s,a], Q-learning

B) Model Free reinforcement learning approach, T[s,a,s'] and R[s,a], Q-learning

C) Value iteration, R[s,a],Policy iteration

D) Model Based reinforcement learning approach, T[s,a,s'], Value iteration

Question 390: When to use Butterfly strategy in options trading?

A) When the market is volatile

B) When the market is moving in a clear trend

C) When the market goes sideways

D) None of the above

Correct answer: C

Question 391: What type of technique is Q-Learning?

A) supervised learning

B) unsupervised learning

C) reinforcement learning

D) regression based learning

Correct answer: C

Question 394: Which of the following statement about Q-Learning is wrong?

A) Q is always viewed as a table.

B) Q is representing not only the reward you get for acting now, it is representing the reward you get for acting in the future as well.

C) Q-Learning is a model-free approach, thus it is similar to other RL

learning processes with the transitions T and the rewards R.

D) Q can be viewd as a table, or it can also be viewed as a function.

Correct answer: C

Question 393: Why the adjusted close is not a good state variable for the Q-learning algorithm?

A) Because you are not able to generalize well to different price ranges.

B) Because it does not have direct correlation with the portfolio's performance

C) Because it is too volatile.

D) Because you are not able to discretize it.

Correct answer: A

Question 396: Which form of Efficient Market Hypothesis (EMH) says we cannot make money in stock market based on insider information.

A) Strong

B) Weak

C) Semi-strong

D) None of the Above

Correct answer: A

Question 395: A learning rate of 1.0 means

A) the table's values have converged

B) price is intersecting with its moving average

C) the new q-value ignores its prior q-value

D) data is normalized but not standardized

Correct answer: C

Question 398: 1. Technical analysis is more valuable for: A) Shorter time periods

B) Longer time periods Correct answer: A

Question 397: What is the worst case scenario of purchasing an option?

A) Losing the premium

B) Losing leverage

C) Losing momentum

D) Losing yourself

Correct answer: A

Question 399: Risk of two securities
with different expected return can be

Question 392: Mathematically, Information Ratio is equal to information Coefficient times the square root of breadth. Please select all that applies

A) Performance of the fund is due to the skills at making prediction times the square root of breadth

B) If you want to improve your performance you can either improve on your skills or your breadth

C) It is a lot easier to increased breadth by finding additional stocks or commodities

D) All of the above

Correct answer: D

Question 400: What is the strong-form of the efficient market hypothesis? compared with:

A) Prices already reflect past publicly available information.

A) Coefficient of variation

B) Price changes to instantly reflect new public information.

B) Standard deviation of securities

C) Prices reflect hidden insider information.

C) Variance of Securities

D) All of the above.

D) None of the above

Correct answer: D

Correct answer: A

C) 2/15, NO

D) 1/15, YES

Correct answer: D

Question 401: Let say you are using reinforcement learning to makes trades, which of the following could be considered a reward for your trades?

A) Bollinger Value

B) Holding Long

C) Buy Stock

D) Daily Return

Correct answer: D

Question 402: What is the sum of all probabilities s' in the transition function?

A) 100

B) s

C) 1

D) a

Correct answer: C

Question 403: According to the Noble Scientist Harry Markowitz, who is best known for his pioneering work in Modern Portfolio Theory: (Please select the best answer from the following options):

A) Bonds are lowest risk assets

B) Stocks are lowest risk assets

C) Blend of Stocks and Bonds could be lowest risk assets than either one of them individually

D) Modern Portfolio Theory shows Efficient Frontier only for Stocks as Bonds are considered risk free

Correct answer: C

Question 404: Assume there is a call option for future X. If the price of future X is 80 dollars, and the call option allows buying the future at price of 90 dollars. What's the price of this call option?

A) 10

B) -10

C) 0

D) None of above

Correct answer: C

Question 405: Over the last year, the average alpha(from CAPM) of your investment fund was 2.0, and the standard deviation of alpha was 0.3, while making 10,000 trades. Rachel, a young and aspiring fund manager who graduated from Georgia Tech, wants to join your investment firm. Over the last year, her mean alpha value was 0.7, and the standard deviation of her alpha value was 0.4, while making 400 trades. You will solely use Information Coefficient to compare the skills between your investment fund and Jane. What is the Information Coefficient of your investment fund, and should you let Jane join your firm?? (The fact that Jane is from Georgia Tech must not affect your decision!)

A) 2/15, YES

B) 1/15, NO

Question 406: Which activity below will increase the breadth of a portfolio management?

A) Invest more money on the selected stocks.

B) Trade one stock more frequently.

C) Improve the strategy to select stocks to invest.

D) Apply machine learning method to make trading decisions on selected stocks.

Correct answer: B

Question 407: Which of the following statements is NOT TRUE about Reinforcement Learning?

A) Reinforcement Learning is a Markov Decision Problem.

B) The goal of Reinforcement Learning is to find a policy that maximizes future reward.

C) Reinforcement Learning describes a solution for finding the optimal trading strategy.

D) Q-Learning is a model free Reinforcement Learning technique.

Correct answer: C

Question 408: When can dynamic programming methods be used to solve a Markov decision process?

A) When the environment can be perfectly modeled and no direct interaction is required

B) When the agent only has experience from interacting with the environment

C) When the environment cannot be perfectly modeled

D) When an online learning algorithm implementation is desired

Correct answer: A

Question 409: The Information Ratio (IR) is directly proportional to: I. manager's skill in forecasting prices II. square root of manager's skill in forecasting prices III. number of independent trading opportunities over time IV.square root of the number of independent trading opportunities over time Choose the correct statements from above:

A) I and III only

B) I and IV only

C) II and III only

D) II and IV only

Question 410: Which of the following is a correct statement regarding the strong form of Efficient Market Hypothesis (EMH)?

A) It does not say anything about fundamental or insider information

B) It suggests that when companies have their quarterly reports that contain fundamental information, prices react immediately

C) It says you can't profit from technical, fundamental or insider analysis

D) It says prices adjust immediately to new public information

Correct answer: C

Correct answer: B

Question 411: What is true about the Efficient Frontier?

A) The purpose of the Efficient Frontier is show the range of least to most efficient portfolios

B) All portfolios below the frontier are sub-optimal in some way

C) In practice, most people try to be as close to the Efficient Frontier as possible.

D) The Efficient Frontier shows that reducing Return always lowers Risk

Correct answer: B

Question 412: Suppose you write a call option for a stock with a premium of $3.14 per share. If you write 100 shares, what is the maximum loss you could experience?

A) $3.14

B) $314

C) $0

D) inf

Correct answer: D

Question 413: Who first invented the Fundamental Law where performance equals to skill times root of breadth?

A) Harry Markowitz

B) Wiliam Sharpe

C) Richard Grinold

D) Tucker Balch

Correct answer: C

Question 414: Which option is correct about Efficient Market Hypothesis (EMH)?

A) The semi-strong version of EMH prevents fundamental analysis
from working, but admit the usage of technical analysis strategies

B) EMH assumes that there are a large numbers of investors

C) The version of EMH don't think we could predict the future price
according to the firm's balance sheet composition and liabilities

D) EMH assumes that new information arrives consistently

Correct answer: B

Question 415: The Information Coefficient is defined as:

A) The correlation of forecasts to returns.

B) The ratio of investing skill to the breadth of investments.

C) The alpha (α) mean divided by the alpha (α) stdev.

D) The coefficient of investing information to returns.

Correct answer: A

Question 416: Which of the following portfolios would perform the best given Grinold's Fundamental Law of Active Portfolio Management?

A) 144 stocks managed by a manager skill of 5

B) 25 stocks managed by a manager skill of 5

C) 9 stocks managed by a manager skill of 10

D) 49 stocks managed by a manager skill of 10

Correct answer: D

Question 417: Which of the following is true about the coin flip casino lessons?

A) Lower Alpha generates a higher Sharpe Ratio

B) More execution opportunities provide a higher Sharpe Ratio

C) Sharpe Ratio grows as the square root of performance

D) All of above

Correct answer: B

Question 418: According to the fundamental law of managing an active portfolio, which method is the most effective way to increase your performance in the market?

A) Increase the number of trades with the same algorithm

B) Improve your algorithm of trading while keeping the number of

trades the same

C) Decrease the number of trades.

D) Sit tight and hope for the best!

Correct answer: B

Question 419: Which one of these is NOT a Efficient Markets Hypothesis form?

A) Semi-strong

B) Weak

C) Strong

D) Semi-weak

Correct answer: D

Question 420: Which of the following pieces of information is NOT used by Markov decision processes to find a policy?

A) S, a set of states

B) R, a reward function

C) A, a set of actions

D) Gamma, a weight of future reward values

Correct answer: D

Question 421: Which of the following describe trading strategies one would expect to use in momentum trading?

A) Buy low, sell high

B) Buy high, sell higher

C) Buy low, sell lower

D) Sell high, buy low

Correct answer: B

Question 422: When you buy a stock and write a call of it, which of the following situations can maximize your profit without making you lose your stock?

A) The stock price ends up and above strike

B) The stock price ends up but below strike

C) The stock price ends down

D) The stock price doesn't change

Correct answer: B

Question 423: When you buy a stock and write a call of it, which of the following situations can maximize your profit without making you lose your stock?

A) The stock price ends up and above strike

B) The stock price ends up but below strike

C) The stock price ends down

D) The stock price doesn't change

Correct answer: B

Question 424: What kind of risk is reduced by diversification?

A) Standard deviation risk

B) Specific risk

C) Short risk

D) Systematic risk

Correct answer: B

Question 425: Concerning Black and Scholes' dynamic hedging technique, which of the following served as the critical piece in solving the problem of having to continuously recalculate risk?

A) Ito Calculus

B) Black-Scholes-Merton Model

C) Linear Algebra

D) Bernie Sanders

Correct answer: A

Question 426: Which of the following four investors is likely to perform the best given the following information coefficients (ICs) and number of investments? Investor 1: IC = 3 N = 25 Investor 2: IC = 5 N = 9 Investor 3:IC= 4 N= 4 Investor4:IC= 4 N= 16

A) Investor 1

B) Investor 2

C) Investor 3

D) Investor 4

Correct answer: D

Question 427: Which factor is NOT considered for Mean Variance Optimization (MVO)?

A) Expected return

B) Volatility

C) Covariance

D) Sharpe ratio

Correct answer: D

Question 428: The portfolios lie alone the efficient frontier is:

A) the highest return portfolios for all sharp ratio levels

B) the highest sharp ratio portfolios for all return levels

C) the lowest risk portfolios for all return levels

D) the highest return portfolios for all risk levels

Correct answer: C

Question 429: When market is strong-form efficient, which of the following will not happen?

A) Insider trade caught by authorities

B) Smart beta fund outperform market in the short term

C) Market timing results in negative profit

D) Momentum strategy outperform for 50 years

Correct answer: D

Question 430: which of the following is not part of the technical analysis?

A) calculate book value

B) calculate 20 day momentum

C) calculate 250 day moving average

D) calculate Bollinger band

Correct answer: A

Correct answer: B

Correct answer: B

Question 431: Which one of the following choices is NOT TRUE about options?

A) Options enable people to control more money using less money.

B) With options, we cannot lose more than the premium that we paid
for that option up front.

C) Options can be bought and sold like stocks.

D) Options can be held on like stocks.

Correct answer: D

Question 432: Which is false concerning different parts of the Q-learning algorithm

A) A learning rate of 0 weights new information highly.

B) Low discount factors make the agent short sighted.

C) High discount factors make the q values diverge.

D) A learning rate of 1 weights new information highly.

Correct answer: A

Question 433: Considering the Semi-Strong form of Efficient Market Hypothesis, which of the following choices is incorrect?

A) The historical prices can be used to predict future prices.

B) Prices cannot reflect all the public and private information.

C) Insider information is not considered in this form.

D) Technical analysis works much better than fundamental analysis in this form.

Correct answer: D

Question 434: What is the reason that the main characters in "The Big Short" decide in credit default swaps?

A) They all read a paper that predicted the possible stock market crash.

B) They all noticed that the housing loan market was inflated with high risk loans being structured into loan packages with a AAA rating (low risk rating)

C) They all noticed that the housing loan market was inflated with medium risk loans being structured into high risk loan packages like BB to CCC

D) They all got tipped off by the SMA for housing loan market predicting a change in the trend

Question 435: What is the reason that the main characters in "The Big Short" decide in credit default swaps?

A) They all read a paper that predicted the possible stock market crash.

B) They all noticed that the housing loan market was inflated with high risk loans being structured into loan packages with a AAA rating (low risk rating)

C) They all noticed that the housing loan market was inflated with medium risk loans being structured into high risk loan packages like BB to CCC

D) They all got tipped off by the SMA for housing loan market
predicting a change in the trend

Question 436: Which of the following is NOT an assumption taken under EMH?

A) Large number of Investors

B) Prices adjust quickly

C) Prices reflect all information

D) New Information is predictable

Correct answer: D

Question 437: Which of these is an invalid allocation of my portfolio if my portfolio consists of AMZN, MSFT, GOOG, FB?

A) 0.25, 0.25, 0.25, 0.25

B) 0.2, 0.4, 0.6, 0

C) 0,0,1.0,0

D) 0.01, 0.01, 0.01, 0.97

Correct answer: B

Question 438: Which step is NOT used to BUILD a Q-Learning Model? Please check all that applies

A) Define states, actions, rewards

B) Choose in-sample training period

C) Iterate Q-table update

D) Backtest on later data

Correct answer: D

Question 439: Two investors have equal active portfolio performance. One investor successfully doubles his skill. Using the Law of Active Portfolio management, how should the other investor adjust his breadth to match the performance of the first investor?

A) Decrease breadth in half
B) Double breadth
C) Quadruple breadth
D) Add change in skill to breadth

Question 440: Which of these is an invalid allocation of my portfolio if it consists of AMZN, MSFT, GOOG, FB?

A) 0.25, 0.25, 0.25, 0.25

B) 0.2, 0.4, 0.6, 0

C) 0,0,1.0,0

D) 0.01, 0.01, 0.01, 0.97

Correct answer: B

Correct answer: C

Correct answer: B

Correct answer: B

Question 441: Based on Mean Variance Optimization (MVO), one should look for stocks that have:

A) anti-correlation in short terms and positive-correlation in long terms

B) anti-correlation in short terms and positive-correlation in short terms

C) anti-correlation in long terms and positive-correlation in long terms

D) anti-correlation in long terms and positive-correlation in short terms

Correct answer: A

Question 442: What are the correct 3 forms of the hypothesis

A) weak, super-strong, strong

B) weak, semi-strong, strong

C) weak, mid-strong, strong

Correct answer: B

Question 443: Which of the following is true for a portfolio created from a group of assets (Choose one)?

A) The return of the portfolio can be greater than the return of each of the individual assets

B) The standard deviation of the portfolio can be smaller than the standard deviation of each of the individual assets

C) The portfolio could have a better risk-return profile than the one defined by the efficient frontier

D) None of the above

Correct answer: B

Question 444: Who received a Nobel Prize for "Efficient Markets Hypothesis (EMH)"?

A) Jules Regnault

B) Eugene Fama

Correct answer: B

Question 445: Bill's Information ratio is 3 times that of Mary's. They both have the same skill (Information Coefficient). How could the difference be explained?

A) Bill has 3 times the number of trading opportunities (breadth) as Mary.

B) Bill went to an Ivy League target school while Mary went to a non-target, thus he has more information about finance.

C) Bill has 9 times the number of trading opportunities (breadth) as Mary.

D) Bill trades in larger size and thus has larger returns.

Correct answer: C

Question 446: Week form of the EMH predicts that you can't predict future prices by looking at historical prices

A) True

B) False

Correct answer: A

Question 447: Week form of the EMH predicts that you can't predict future prices by looking at historical prices

A) True

B) False

Correct answer: A

Question 448: Which of the following statement is true? The reinforcement learning can be mapped to trading as follows:

A) S: the states of the market, A: the buy, sell, do nothing actions, T: the trades completed, R: the money made at the end of the trade

B) S: the features and indicators of the stocks, A: the buy, sell, do nothing actions, T: the market, R: the money made at the end of the trade

C) S: the available states of the robot, A: the assets currently in portfolio, T: the transition functions used to determine buy and sell actions, R: the robot used to make decisions

D) The reinforcement learning can not be mapped to trading.

Question 449: A Markov decision problem is NOT defined by:

A) the potential states

B) the potential actions

C) the potential rule

D) the reward function

Correct answer: C

Question 450: Which of the following statement is true? The reinforcement learning can be mapped to trading as follows:

A) S: the states of the market, A: the buy, sell, do nothing actions, T: the trades completed, R: the money made at the end of the trade

B) S: the features and indicators of the stocks, A: the buy, sell, do nothing actions, T: the market, R: the money made at the end of the trade

C) S: the available states of the robot, A: the assets currently in portfolio, T: the transition functions used to determine buy and sell actions, R: the robot used to make decisions

D) The reinforcement learning can not be mapped to trading.

Correct answer: C

Question 451: Which statement is not true ?

A) You can have much lower risk portfolio if you combine assets that are anti-correlated.

B) Anti-correlation is good strategy for long term, an positive correlation is good for short term to maximize your return.

C) Mean variance optimization is a way of taking a potential set of assets and figuring out how they should be blended by looking at their co-variance among other things.

D) The output of mean variance optimization is a set of weights, one weight for each asset in a portfolio.

Correct answer: B

Question 452: Harry Markowitz showed that if you wanted the lowest risk returns, what should you buy?

A) Stocks

B) Bonds

C) A Blend of Stocks and Bonds

Correct answer: C

Question 453: Which of the following actions is NOT considered technical analysis of a stock?

A) Studying price history of the stock

B) Studying trading volume of the stock

C) Studying the S&P 500 trends

D) Calculating the book value of the stock

Correct answer: D

Question 454: Which of the following is not true about Q-Learning?

A) Q-Learning cannot be applied to problem domains where all states are not fully defined.

B) Q-Learning can be applied to problem domains where all

transitions are not fully defined.

C) No additional structures are required to store rewards – R(s,a).

D) Q-value for any state action pair takes into account future

rewards.

Correct answer: A

Question 455: What did Charlie Gellerand and Jamie Shipley realize when Bear Stearns claimed that the price of the CDOs that they wanted to short did not move?

A) Charlie Gellerand and Jamie Shipley were wrong. The price of the CDOs should stay the same.

B) Charlie Gellerand and Jamie Shipley were wrong. The price of the CDOs should go up.

C) Charlie Gellerand and Jamie Shipley were right. The price of the CDOs should go down due to subprime mortgage losses.

D) Charlie Gellerand and Jamie Shipley were right. The price of the CDOs should go down because people were paying their mortgages on time.

Question 456: Which of the following is not a Technical Indicator?

A) Price / Earnings ratio

B) Price / Volume ratio

C) momentum

D) percent change in volume

Correct answer: A

Question 457: What is the outcome of the policy function in reinforcement learning? A.The Q value of the current state B. The optimal action of the current state C. The probability distribution of next states given an action D. None of above

A) The Q values are used to develop the policy function.

B) Correct

C) It is important information in developing the policy function, but not the outcome

D) Not correct

Correct answer: B

Question 458: How does the alpha and gamma values in Q-learning relate to the agent learning/update?

A) The agent learns more quickly with larger alpha value and values later rewards more with smaller gamma

B) The agent learns more quickly with larger alpha value and values later rewards more with larger gamma

C) The agent learns more slowly with larger alpha value and values later rewards more with smaller gamma

D) The agent learns more slowly with larger alpha value and values later rewards more with larger gamma

Correct answer: B

Question 459: For what value of lambda with discounted reward optimization, you will reach $1 million faster?

A) 0.75

B) 0.5

C) 0.25

D) 0.1

Correct answer: A

Question 460: In S&P credit rating, which rating means the best rating?

A) AAAA

B) AAA

C) AA

D) A

Correct answer: B

Question 461: What are components of MarKov decision Problem?

A) Set of actions->Pi(policy), Transition functions, negative Reward function.

B) Set of States Prime, Set of actions, Set of States, Reward function.

C) Set of States, Set of actions, Transition functions, Reward function.

D) Sharpe Ratio, Set of actions, Transition functions, Set of actions.

Correct answer: C

Question 462: What makes Dyna-Q suitable for financial trading applications?

A) Dyna-Q takes historical & real data in account

B) Dyna-Q takes real & simulated experience in account

C) Dyna-Q is RL method

D) None of above

Correct answer: B

Question 463: In the fundamental law, the given equation is IR = IC * √BR, the information ratio, which is the measure of how the portfolio exceeds the market's performance, is calculated by:

A) Mean(αp(t))/stddev(αp(t))

B) Stddev(αp(t))/mean(αp(t))

C) Mean(αp(t))

D) None of the Above

Correct answer: A

Question 464: Which of these statements is False about technical analysis?

A) Technical analysis is effective on deciding short term strategy

B) Technical analysis is more effective when combining multiple indicators

C) Technical analysis considers the book value of a company

D) Technical analysis considers the historial price and volume of the stock

Correct answer: C

Question 465: Suppose two fund managers M1 and M2 have residual return alpha1 and alpha2, and mean(alpha1)=mean(alpha2), stdev(alpha1) > stdev(alpha2). If both managers have the same numbers of trades per year. Which manager do you think has better skills?

A) M1

B) M2

C) They are the same.

D) Cannot tell.

Correct answer: B

Question 466: Why did Charlie Geller and Jamie Shipley of Brownfield Capital get rejected by JP Morgan to acquire their ISDA?

A) Brownfield Capital didn't have enough fund managers to be considered large enough for an ISDA

B) Brownfield Capital didn't have enough money in their fund to be considered for an ISDA

C) Brownfield Capital hadn't been established long enough to meet ISDA age requirements

D) Charlie Geller and Jamie Shipley didn't have the correct licensing to file for an ISDA

Correct answer: B

Question 467: If we write two XYZ call options with strike price $110, long one XYZ call option with strike price $100, long one XYZ call option with strike price $120, and the total premium for these positions is $-233, then what would be the maximum P/L that we could get (options are traded in unit of 100 shares)?

A) 277

B) 777

C) 233

D) 577

Correct answer: B

Question 468: Which of the following statements is not true?

A) Systematic risk is that risk undertaken by exposure to any asset in the asset class.

B) Diversification mutes systematic risk.

C) Specific risk is the risk associated with a particular asset.

D) Diversification benefit decelerates as the portfolio becomes too diverse.

Correct answer: B

Question 469: Which of the following makes up a Markov Decision Problem?

A) set of actions, transition function and state function

B) set of states, set of actions, transition function and reward function

C) set of states, reward function and action function

D) set of states, set of actions and reward function

Correct answer: B

Question 470: The value of the Discounted Reward (Gamma) is 0.95. How do we value the future reward?

A) More

B) Less

C) Equally

D) No value

Correct answer: A

Question 471: Imagine you are considering investing in one of two different hedge funds, Black or Knight. If Black has twice the market skill that Knight has, but Knight has three times the breadth that Black has, what is the best choice according to the Fundamental Law?

A) Choose Black because the higher breadth will likely result in a better performance

B) Choose Knight because according to the fundamental law, skill is more important.

C) There isn't enough information to calculate the Fundamental Law

Correct answer: A

Question 472: Which of the following is not an input of the mean variance optimization (MVO)?

A) Volatility

B) Covariance

C) Target return

D) Asset weights for portfolio that minimize risk

Correct answer: D

Question 473: What is the name of the option strategy below: Long 1 call with a strike price of (X − a) Short 2 calls with a strike price of X Long 1 call with a strike price of (X + a) where X = the spot price (i.e. current market price of underlying) and a > 0.

A) Bear Put Spread

B) Butterfly Spread

C) Long Straddle

D) Bull Call Spread

Correct answer: B

Question 474: The 3 forms of the efficient market hypothesis, in order from weak to strong, proclaim market efficiency with regard to which additional sources of information, respectively?

A) historical price/volume data, public/fundamental information, insider information

B) insider information, public/fundamental information, historical price/volume data

C) public/fundamental information, insider information, historical price/volume data

D) public/fundamental information, historical price/volume data, insider information

Question 475: Technical analysis uses:

A) historical price and volume; future dividends

B) historical price and volume

C) historical volume and projected economic indicators

D) historical volume

Correct answer: B

Question 476: Which of the following date/price time series represent the most profitable scenario for the holder of a PUT option purchased on 01/01/18, with a strike price of $10 and an expiry of 01/03/18?

A) 01/01/18 / $11, 01/02/18 / $12, 01/03/18 / $13, 01/04/18 / $14

B) 01/01/18 / $11, 01/02/18 / $1, 01/03/18 / $1, 01/04/18 / $1

C) 01/01/18 / $11, 01/02/18 / $10, 01/03/18 / $2, 01/04/18 / $0

D) 01/01/18 / $11, 01/02/18 / $0, 01/03/18 / $50, 01/04/18 / $500

Correct answer: D

Question 477: What type of strategies does the Strong Efficient Market Hypothesis prohibits?

A) Insider Strategies

B) Fundamental Strategies

C) Technical Strategies

D) All of the above

Correct answer: D

Question 478: Reinforcement learning algorithms fit a problem setting known as Markov decision process. In the Markov decision process, the outcome of applying any action to any state depends on what?

A) only on this action and state

B) this action and state, as well as, preceding actions or states

C) T, the transition probability

D) winning the Soviet lottery

Correct answer: A

Question 479: Which of the statements below is FALSE?

A) A higher alpha generates a higher Sharpe ratio

B) More execution opportunities generates a higher Sharpe ratio

C) More breadth generates a higher Sharpe ratio

D) A higher Sharpe ratio increases expected return

Correct answer: D

Question 480: In "The Big Short", what term or acronym is introduced to described a fund comprised of several collateralized debt obligations?

A) Synthetic CDO

B) Mortgage-Backed Security

C) CDO

D) Credit Default Swap

Correct answer: A

fundamental analysis.

Correct answer: B

Question 481: Tom purchased 100 calls of stock X on one day, where the due date of the option is 12.16.2018, the strike price is 120, and the last price of the option is 2.00. If on that day the price of X is 115 and on 12.16 the price first time arrives above 120, which is 125. How much profit can Tom gain by 12.16 in theory? (We do not take trading fee into consideration.)

A) 1000

B) 300

C) 500

D) 12000

Correct answer: B

Question 482: Can you create a portfolio that has lower risk than any individual component?

A) Yes. Co-variance between assets allows one to mitigate risk

B) No. As portfolios are weighted sums of assets we cannot lower risk beyond the lowest risk asset. asset.

C) Yes. As we can switch between long and short positions on an individual asset, we can lower risk with an optimal strategy

D) No. Risk cannot be expressed as a number therefore there is no concept of lower risk.

Correct answer: A

Question 483: The efficient markets hypothesis failed in 2008 due to the propagation misinformation about the risk and value of mortgages as collateral for CDO's. What macroeconomic metric increased high-risk mortgage lending prior to the 2008 financial crisis and therefore distorted the value of CDO's based on mortgages?

A) Unemployment Rate

B) Interest Rate

C) Gross Domestic Product

D) Economic Growth Rate

Correct answer: B

Question 484: Which market was being shorted in "The Big Short"?

A) Student Loans

B) Healthcare

C) Housing

D) Manufacturing

Correct answer: C

Question 485: Consider how you would evaluate a asset for different time horizons. You may be trying to evaluate short horizons, such as price movements in the coming seconds, or long horizons, such as years or decades away, or any period in between. What time horizons are most suitable for technical analysis and fundamental analysis?

A) Short horizons for technical analysis, short horizons for
fundamental analysis.

B) Short horizons for technical analysis, long horizons for
fundamental analysis.

C) Long horizons for technical analysis, short horizons for
fundamental analysis.

D) Long horizons for technical analysis, long horizons for

Question 486: You are an running a hedge fund. According to the Fundamental Law of Portfolio Management, which of the following have the greatest positive impact on your portfolio?

A) Doubling the correlation of predicted asset prices to actual asset prices.

B) Doubling the number of positions taken in the portfolio.

C) Decreasing commissions by cutting the number of trades in half.

D) A and B are the same.

Correct answer: A

Question 487: Which version of the Efficient Market Hypothesis says that insider trading is the only way to make money?

A) Weak

B) Semi-Strong

C) Strong

D) Ultra-Strong

Correct answer: B

Question 488: Why is Dyna preferred over basic Q-Learning?

A) Dyna-Q can handle positive rewards, while basic Q-Learning cannot

B) Dyna-Q converges faster than Q-Learning

C) Basic Q-learning hallucinates extra data, rather than using actual data

D) Dyna-Q was designed for financial systems

Correct answer: B

Question 489: In Grinold's Fundamental Law of Active Portfolio Management, which of the following represents a perfectly correct predictor for the managers Information Coefficient or IC.

A) 0

B) 1

C) 1.5

D) -1

Correct answer: B

Question 490: What is the purpose of the random action rate (rar) and how does it relate to the concept of exploration vs exploitation?

A) Random action rate is the process of randomly exploring known states with the highest rewards.

B) Random action rate is the process of randomly picking the best known actions and as it decays it will optimize world exploration.

C) Random action rate is the process of randomly exploring actions and as it decays it will lead to the exploitation of optimal actions.

D) Random action rate is not useful for Q-Learning as it does not provide the optimal actions.

Correct answer: C

D) Q-learning require to maintain and update model of transaction

function and reward function

Correct answer: C

Question 491: Which of the following problem would reinforcement learning be NOT suitable for?

A) Control a mobile robot

B) Optimize operations in factories

C) Play board games

D) Control a self-driving car

Correct answer: D

Question 492: Which of the following is NOT an input to the Mean Variance Optimization function?

A) Expected return

B) Volatility

C) Momentum

D) Covariance

Correct answer: C

Question 493: Which one of these sources are incorrect in EMH information sources?

A) Fundamental

B) Price/Volume

C) Public

D) Exogenous

Correct answer: C

Question 494: which one of following is true regarding Dyna-Q and Q learning

A) Because both Dyna-Q and Q-learning choose optimal policy using Q value table which is updated upon real world interaction, therefore both Dyna-Q and Q learning could be considered as model-free reinforcement learning

B) the higher learning rate used in Dyna-Q and Q-learning, the slower convergency of the optimal policy

C) both Dyna-Q and Q-learning require exploration to discover optimal policy, difference is that Dyna-Q use simulation on transaction and reward model to take random action, while Q-learning needs to do random action in the real world

Question 495: When comparing two portfolios that lie on the efficient frontier:

A) The portfolio with the lowest return is suboptimal compared to the portfolio with the highest return

B) The portfolio with the highest return will have the highest Sharpe ratio

C) The portfolio on the efficient frontier with the lowest return will have the lowest risk

D) Each portfolio offers the lowest level of risk for an expected return

Correct answer: D

Question 496: What is the strong form of EMH?

A) Prices adjust to new public information

B) Future prices cannot be predicted by just analyzing historic prices

C) Prices adjust to public and private information

D) None of the above

Correct answer: C

Question 497: If S = spot price, E = exercise price, then the value of a put option is

A) MAX(0, E -S)

B) MAX(0, S -E)

C) MIN(0, E -S)

D) MIN(0, S -E)

Correct answer: A

Question 498: How the randomness of actions should be set during the iterations of Q-learning Process?

A) Increase during iteration with a proper start value

B) Decrease during iteration with a proper start value

C) Stay the same with a proper start value

D) No randomness should be applied

Correct answer: B

Question 499: Regarding the Effective Market Hypothesis, which of the following is not true

A) Information can come from Insider knowledge

B) In the weak form, future prices cannot be predicted

C) In the strong form, prices reflect all data, both public and private

D) New information comes randomly and prices available

information

Correct answer: B

Question 500: If you predict the future stock price will move up and down in a small price range, which option strategy you will apply?

A) Buy Call

B) Buy Short

C) Cover Call

D) ButterFly

Correct answer: D

Question 501: In Q-Learning, we use MAX operator to find the optimal policy, what if we use MEAN operator instead of MAX in the Bellman Equation. Which one of the following do you think is correct?

A) The learning process will not converge if not using MAX operator

B) It depends on the problem, it might or might not converge.

C) It will still converge to the optimal policy, with MEAN operator the target policy will be safer as this operator averages out some noise in the learning process.

D) It will converge to some policy, not necessarily the same optimal policy as we obtain using MAX operator.

Correct answer: D

Question 502: Front running a stock (high speed network) operates against (trying to beat) which Efficient Market Hypothesis (EMH)?

A) There are a large number of investors operating in the Market for Profit

B) New information arrives randomly

C) Prices adjust quickly

D) Prices reflect all available information

Correct answer: C

Question 503: Which one of the following statement is right regarding to CDO?

A) A CDO is a type of asset-backed security that represents the amount of interest in a pool of mortgage loans.

B) A CDO can be backed by any debt collateral, including mortgages, bonds, private loans.

C) A CDO generally invests in CDSs.

D) A CDO is a financial swap agreement that the seller will compensate the buyer in the event of a debt default.

Correct answer: B

Question 504: Statement:As per Grinold's fundamental Law Performance is directly proportional to breadth

A) The Statement is aways True

B) The Statement is aways False

C) The Statement is sometime True

D) None of the Above

Correct answer: B

Question 505: Which of the following statement is TRUE in terms of CAPM beta?

A) Stock that has higher beta is better than stock that has lower beta.

B) If beta of a stock is greater than 1, it implies the stock has higher volatility than the market.

C) If beta of a stock is less than 1, it implies the stock has higher volatility than the market.

D) If beta of a stock is equal to 1, it implies the stock has the same level of risk as the stock market.

Correct answer: B

Question 506: What is the assumption behind technical analysis?

A) Past market trends can predict the future behavior for the market as a whole and for individual stocks.

B) Future market behaviour is independent of past.

C) Future stock stock price is random and follows no trend.

D) Both markets & stock are random, and difficult to model with high precision.

Correct answer: A

Question 507: We see that a stock option with a $50 strike price is priced at $3.01, and the current market price for that stock is $60. what is the actual price we pay for the option if we wish to buy it?
A) $3.01
B) $50
C) $53.01
D) $301
Correct answer: D

Question 508: An efficient market hypothesis states in which all public or private information is reflected in current market prices is classified as

A) market efficiency

B) semi strong efficiency

C) weak form efficiency

D) strong form efficiency

Correct answer: D

Question 509: Peter, employee of Company A tells you before his company's earning's call that the company is going to give out a big dividend. In which form of Efficient Market Hypothesis below that you can benefit from this piece of information?

A) Weak

B) Semi-Strong

C) Strong

D) Both A and B

Correct answer: D

Question 510: What's the default rate that will make the CDO worthless?

A) 5%

B) 6%

C) 7%

D) 8%

Correct answer: D

Question 511: What is an Experience Tuple in Reinforcement Learning?

A) The state, action, altered state and reward from each step used to build policy

B) The value iteration used to find T and R through the use of evaluating the reward

C) The infinite horizon maximizing the experience over all rewards

D) The act of cutting down the mightiest tree in the forest ... WITH ... A HERRING!

Correct answer: A

Question 512: According to the EMH, which of the statement is not correct?

A) The highest level of market efficiency is strong form efficiency.

B) If markets are semi-strong form efficient, then passive portfolio management strategies are most likely to earn abnormal returns

C) An efficient market requires price adjustments occur quickly.

D) Information is the central issue of the efficient market.

Correct answer: B

Question 513: Which has a greater impact on the risk adjusted return?

A) Skill on predicting alpha

B) Holding more equities

C) Turning over assets more frequently

D) All have equal impact.

Correct answer: A

Question 514: Based on the fundamental law, which of the followings can increase the information ratio from 1 to 2?

A) Double the strategy's breadth (BR).

B) Double the manager's information coefficient (IC).

C) Double BR and IC simultaneously.

D) None of above.

Correct answer: B

Question 515: In the following elements, which are relied in Q Learning

A) Transition Matrix

B) Reward Function

C) Both

D) None of them

Correct answer: D

Question 516: The range of a long call position's delta is
A) [0,1]
B) [-1,1]
C) [-1,0]
D) [0,infinite]
Correct answer: A

Question 517: If using Borllinger band as a technical indicator, when is the good time to buy the stock based on the value of the technical indicator?

A) when the value>1

B) when the value<1

C) when the value changes from >1 to <1

D) when the value changes from -1

Correct answer: D

Question 518: Considering the following code, what is the final output:

```
import numpy as np a = np.arange(6) b = a b.shape = 3, 2 b = b.reshape(2,3)
print a
```

A) [0,1,2,3,4,5]

B) [[0, 1], [2, 3], [4, 5]]

C) [[0, 1, 2], [3, 4, 5]]

D) [[0, 1, 2, 3], [4, 5]]

Correct answer: B

Question 519: The Efficient Market Hypothesis (EMH) prohibits different kinds of analysis based on whether it is weak, semi-strong, or strong. Select the answer that matches the correct EMH to the analysis that it prohibits.

A) Semi-strong : Technical Analysis, Insider Analysis

B) Semi-strong : Technical Analysis, Fundamental Analysis

C) weak : Fundamental Analysis, Technical Analysis, Insider Analysis

D) weak : Fundamental Analysis

Correct answer: B

Question 520: Which of the following is not an EMH assumption?

A) There are a large number of investors

B) New information arrives daily

C) Prices adjust quickly

D) Prices reflect all available information

Correct answer: B

Question 521: Which one is good technical analysis indicator?

A) interest rates

B) consumer sentiment

C) momentum of a stock's price

D) inflation

Correct answer: C

Question 522: What are the inputs to the Mean Variance Optimization algorithm?

A) Daily returns, Standard Deviation, Correlation, Expected return

B) Expected return, Sharpe Ratio, Correlation, Target return

C) Expected return, Weights, Standard Deviation, Cumulative return

D) Expected return, Standard Deviation, Correlation, Target return

Correct answer: D

Question 523: Which of the following are characteristics of technical analysis as it relates to stock trading?

A) Price and earnings

B) Volume and book value

C) Price and volume

D) Book value and cash flow

Correct answer: C

Question 524: Which isn't a good indicator for technical analysis?

A) simple moving average

B) interest rates

C) momentum

D) Bollinger Bands

Correct answer: B

Question 525: Which best distinguishes reinforcement learning from supervised learning?

A) Predicting the mid-point value between the highest ask and the highest bid.

B) Creating a rule-based policy that takes price as input and decides whether to buy, sell, or hold.

C) Using positive net profit as a reward signal when trading profitably.

D) Both B and C

Correct answer: D

Question 526: Walmart announces that it is going to join hands with Google to beat Amazon in the space of Voice enabled Shopping. Which type of EMH allows any investor in Walmart (insider or outsider) to take advantage of this?

A) Weak EMH only

B) Weak and Semi-strong EMH

C) Semi-strong EMH only

D) Semi-strong and Strong EMH

Correct answer: A

Question 527: Which of the following statement is false regarding Efficient Markets Hypothesis (EMH)?

A) It should be impossible to outperform the overall market through expert stock selection

B) Stocks can be never traded at their fair value

C) The only way for investor can possibly obtain higher returns is by chance or by purchasing riskier investment

D) Stocks are always traded at their fair value

Correct answer: B

Question 528: A lower learning rate enables the Q-Learning algorithm to learn more quickly by strongly preserving the previous value of Q[s,a] over the improved estimate.

A) True

B) False

Correct answer: B

Question 529: Q-Learning is a model free approach and can be applied to domains where all states and / or transitions are not fully defined.

A) True

B) False

Correct answer: A

Question 530: SEC regulations make it illegal to use "insider information" to earn profits. The SEC must believe that the market is:

A) strong form efficient, but not semi-strong form efficient.

B) semi-strong form efficient, but not strong form efficient.

C) strong form efficient.

D) semi-strong form efficient, but not weak form efficient.

Correct answer: B

Correct answer: B

Correct answer: A

Correct answer: A

Question 531: In The Big Short, the banks bundled high risk mortgages together into CDOs and the ratings agencies gave these what rating?

A) 100

B) AAA

C) A+

D) Very good

Correct answer: B

Question 532: At the beginning of the crisis breakout, how can the value of mortgage subprime bonds not be affected by the demise of the housing mortgage subprime loans which are the very thing these bonds insure?

A) They are independent markets and are not always correlated since those mortgage bonds especially modern ones made of layers of tranches and the derivatives such as CDOs are very complicated products.

B) The mainstream investment banks are selling/unloading bonds to unsuspecting customers, and they will not de-value them until they get them off their books, which are in fact criminal activities.

Question 533: Which of the following statements is false?

A) Q-Learning is only guaranteed to converge when supplemented by methods like Dyna due to the increased computation and further exploration.

B) Q-Learning is model free and does not require knowledge about the rewards function or state transition matrix.

C) Using Dyna can cause Q-Learning to take more computational time to converge if hallucinating is not significantly cheaper than interactions.

D) Randomness in actions can be used to force an agent to explore the environment

Question 534: Which combination of information ratio and breadth produces the highest excess return?

A) IR = 1000, B = 1000

B) IR = 100, B = 10,000

C) IR = 10,000, B = 100

D) IR = 5,000, B = 5,000

Correct answer: D

Question 535: Using the efficient frontier, what would be the optimal portfolio for a funding looking for the lowest risk possible?

A) 100% stocks

B) 100% bonds

C) A mix of stocks and bonds

D) 100% out of the money options

Correct answer: C

Question 536: What is NOT a technical analysis characteristic?
A) Earnings
B) Price
C) Volume
D) Both B and C
Correct answer: A

Question 537: What is NOT a technical analysis characteristic?

A) Earnings

B) Price

C) Volume

D) Both B and C

Correct answer: A

Question 538: Assuming you are a broker and you predict that APPL stock will go sideways in the future. The current APPL stock price is $201. You decide to use "butterfly" combination options to make profit from the market. You buy two calling options. One option's strike price is $195 and the option's price is $9. The other option's strike price is $210 and the option's price is $1. Meanwhile, you write two calling options whose strike price is $200 and price of the written options is $4. What are the maximum profit and maximum loss of these trading strategies?

A) $300, $200.
B) $3, $2.
C) $200, $300.
D) $300, $300.

Question 539: If we have to map trading problem to Reinforcement learning, Sharpe Ratio is what kind of a factor?

A) It is a state we need to consider before we make a trade

B) It is an action that we give to the market to cause a trade to occur

C) It a potential reward to inform our algorithm how to trade

D) Both A) and B)

Correct answer: D

Question 540: Consider a system with 2 states and 2 actions. You perform actions and observe rewards and transitions as: in S1, take a1, receive R=10, and land in S1; in S1, take a2, receive R=-10, and land in S2; in S2, take a1, receive R=+20, and land in S1. Use Q-learning with learning rate 0.5 and discount factor 0.5 for each step, what is Q(S2, a1)? Assume all entries of the Q-table are initialized to zero.

A) 10
B) 8.75
C) 0
D) 5

Correct answer: B

predict future prices; in strong form all information (historical,

public, or private) can give a financial advantage.

Correct answer: B

Question 541: -Consider two trading firms, trading firm A and trading firm B, that have comparable performance when trading. Which two factors does trading firm A need to have over trading firm B to have twice the performance? 1. Twice the breadth of trades and the same skill 2. The same breadth of trades and twice the skill 3. Twice the breadth of trades and twice the skill 4. Four times the breadth of trades and the same skill

A) I, II, III

B) II, IV

C) I

D) I, IV

Correct answer: B

Question 542: Which of the following is true about Reinforcement Learning

A) It is a supervised learning technique

B) It's goal is to minimize some predefined reward

C) With regard to trading, Daily Returns is a good example of a reward.

D) With regard to trading, current position (long/short) in a stock is a good example of a reward.

Correct answer: C

Question 543: According to Grinold's Fundamental Law, the information ratio is computed as a performance metric that measures:

A) a portfolio manager's trading opportunities

B) a portfolio manager's quantitative skill

C) a portfolio's returns that exceed market performance

D) a portfolio's correlation of forecasts to returns

Correct answer: C

Question 544: How does the weak form of the Efficient Market Hypothesis (EMH) differ from the strong form of the EMH?

A) In weak form, both historical and public information cannot predict future prices; in strong form, only private information can give a financial advantage.

B) In weak form, only historical information cannot predict future prices; in strong form, no information (historical, public, or private) can give a financial advantage.

C) In weak form, all information (historical, public, or private) can predict future prices; in strong form, only historical information can give a financial advantage.

D) In weak form, no information (historical, public, or private) can

Question 545: According to Portfolio Optimization, which of the following is an acceptable portfolio weighting to reduce risk given three stocks, ABC, PQR, XYZ, and the following facts: 1. ABC, PQR, XYZ each has a return of 12% 2. ABC and XYZ have a correlation of -0.9 3. PQR and XYZ have a correlation of 0.9 4. The expected portfolio return is 12%

A) ABC: 33.3%; PQR: 33.3%; XYZ: 33.3%

B) ABC: 25%; PQR: 25%; XYZ: 50%

C) ABC: 25%; PQR: 50%; XYZ: 25%

D) ABC: 50%; PQR: 25%; XYZ: 25%

Correct answer: D

Question 546: Given the following information about identically performing portfolios: 1. Portfolio A performs no trades within the time frame 2. Portfolio B performs 2 trades within the time frame 3. Portfolio C performs 100 trades within the time frame Which portfolio manager has the greatest skill according to Grinold's Fundamental Law of Active Portfolio Management?

A) A

B) B

C) C

D) All of the above

Correct answer: A

Question 547: Assuming a $0 commission, at what price will the stock need to be exercised and sold at for the buyer of the call option of 100 shares to break even. The strike price is at $123 and the option price is $2.00 a share.

A) 125
B) 121
C) 143
D) 127

Correct answer: A

Question 548: Which of the following statements is CORRECT about model-free reinforcement learning approaches like Q-learning?

A) They require all states and transitions to be fully defined.

B) They DO NOT require all states and transitions to be fully defined.

C) They require additional data structures to store transitions and rewards.

D) They DO NOT take into account future rewards.

Correct answer: B

Question 549: A collateralized debt obligation (CDO) are securities that may be composed of a diverse set of assets. Specifically, in The Big Short, CDOs that caused the financial crisis were composed of what asset?

A) long term car loans

B) risky corporate bonds

C) low rated mortgage-backed securities

D) high interest credit car loans

Correct answer: C

Question 550: What market does Michael Burry create that allows him to bet against market-based mortgage backed securities?

A) Mortgage Market

B) Foreclosure Market

C) Credit Default Swap Market

D) Credit Card Debt Market

Correct answer: C

Question 551: Which of the following is FALSE about Reinforcement Learning (RL)?

A) RL aims to find the best policy to maximize your reward.

B) Holding LONG or Holding SHORT are considered as "Actions".

C) Daily Return can be considered either as a "Reward" or as a "State".

D) RL describes a problem, not a solution.

Correct answer: B

Question 552: An investor's summary measure of skill is measured by:

A) SQRT(alpha) * STDEV(alpha)

B) MEAN(alpha) / STDEV(alpha)

C) MEAN(alpha) / (1 -STDEV(alpha))

D) STDEV(alpha) * SQRT(alpha)

Correct answer: B

Question 553: Consider two scenarios in coin flip casino experiment: 1) 1000 dollars on single bet. 2) 10 dollars each on 100 bets. Scenario 1 has _____ return, _____ standard deviation, _____ sharpe ratio when compared to Scenario 2

A) lower, equal, lower

B) equal, higher, lower

C) higher, equal, higher

D) equal, lower, lower

Correct answer: B

Question 554: What is the term for the correlation between a fund manager's forecasted return and the fund's actual return?
A) Information Ratio
B) Information Coefficient
C) Breadth
D) Sharpe Ratio
Correct answer: B

Question 555: In what scenario can Reinforcement learning NOT be applied?

A) learning to control a mobile robot

B) learning to play board games

C) learning to optimize operations in factories

D) learning to fly an airplane

Correct answer: D

Question 556: Given the Efficient Frontier of a portfolio, how can you find the allocation for the maximum Sharpe Ratio portfolio?

A) Draw a tangent line from the maximum return value on the curve to the y axis

B) Choose the point on the curve with lowest risk

C) Draw a tangent line from the origin to the efficient frontier

D) Not enough information

Correct answer: C

Question 557: Which of the following is not a form of the Efficient Market Hypothesis?

A) Weak

B) Semi-Weak

C) Strong

D) Semi-Strong

Correct answer: B

Question 558: Investor A and Investor B have the same level of skill with regards to investing in the market. According to Grinold's Fundamental Law, what is the best way for Investor A to improve his/her performance over that of Investor B?

A) Increase the amount of time spent researching the market before
making trades

B) Increase the total amount of money invested in their portfolio

C) Increase the total number of positions in their portfolio

D) Only invest in the S&P 500

Correct answer: C

Question 559: Which form of the Efficient Markets Hypothesis implies that some form of fundamental analysis will be able to reliably produce excess returns?

A) Weak

B) Semi-strong

C) Strong

D) Both (B) and (C)

Correct answer: A

Question 560: The key instrument of the short selling in The Big Short was collaterized debt obligations. Burry realized that the housing market was overvalued because CDOs were rated _____ despite being comprised of _____.

A) Triple-A, only low risk CDOs

B) Triple-A, lowest rated tiers of mortgage-backed securities

C) Double-S, lowest rated tiers of mortgage-backed securities

D) Double-S, only low risk CDOs

Correct answer: B

Leaking Informations Inc.国

s executive at a bar, and learns that the company is about to make

a public announcement in two days about a highly classified resea

rch project t

Correct answer: C

Question 561: _____ is that risk undertaken by exposure to any asset in the asset class.

A) Specific risk

B) Systematic risk

C) Business risk

D) No correct answer

Correct answer: B

Question 562: What ratio is the basis for refuting the semi-strong EMH?
A) (Earnings / Price) Ratio
B) (Price / SMA) Ratio
C) (SMA / Price) Ratio
D) (Price / Earnings) Ratio
Correct answer: D

Question 563: Which of the following statements violate the semi-strong form of the efficient market hypothesis?

A) A CEO of a company buys a large number of stocks of the company just before an earnings call of that company and ends up with a large profit.

B) Jane carefully chooses a portfolio of stocks and holds the portfolio for a year. John buys S&P500 ETF and holds it for a year. At year end, Jane makes more profit than John.

C) A trading firm figures out that the daily returns of a stock multiplied by the relative strength index of that stock gives an indication of price movement of that stock with high probability.

D) A hedge fund manager talks to a company called

Question 564: Which of these is the difference between model-based and model-free reinforcement learning algorithms?

A) Model-based RL is faster.

B) Model-free RL is more accurate.

C) Model-based RL algorithms try and estimate the dynamics model T.

D) Model-free algorithms only work with discounted rewards.

Correct answer: C

Question 565: How should you trade a stock when its moving average reaches the upper bollinger band?

A) Sell

B) Buy

C) Hold

D) Long

Correct answer: A

Question 566: Reinforcement algorithms solve which of the following problem

A) Linear Regression

B) Markov Decision Problem

C) Supervised Regression

D) KNN

Correct answer: B

Question 567: Which of the assumptions are true for Efficient Market Hypothesis (EMH)? I. There are large number of investors, and new information arrives randomly. II. Investors usually react quickly to new information. III. Accounting information accurately portray a company's economic situation. IV. Events occur randomly to affect the market.

A) I, II, III, IV
B) I, II, III only
C) I, II, IV only
D) I, III, IV only
Correct answer: D

Question 568: Type I and Type II differences 1. Type 1 -False Positive 2. Type 2 -False Negative 3. Type 1 -False Negative 4. Type 2 -False Positve

A) 1 & 2 are correct

B) 1 & 4 are correct

C) 2 & 3 are correct

D) 3 & 4 are correct

Correct answer: A

Question 569: Is there a limit on the number of iterations over Q learning training data where performance stops improving?

A) No, continuing to train will yield better performance

B) Yes, there is a convergence point at which performance will no

longer improve

C) Yes, the limit is determined by machine performance

D) Not enough information provided to determine the limit

Correct answer: B

Question 570: Which of the following is NOT true about MBS's (mortgage backed securities)?

A) MBS's are commonly used to redirect the interest and principal payments of mortgages to shareholders.

B) The MBS is traded OTC (over the counter) as insurance against non-payment of debt.

C) MBS's consist of multiple pools of securities, known as tranches.

D) Each part of the MBS has a different credit rating, dependent on the risk of repayment.

Correct answer: B
Correct answer: A

Question 571: Which of these 3, are essential components a reinforcement learning algorithm requires to function?

A) Reward function,action,deep learning

B) Reward function,states,regression

C) Reward function,agent,action

D) States,agent,natural language processing

Correct answer: C

Question 572: If you were given a chart with the price of a stock and then asked to add Bollinger Bands, the correct response would be to:

A) plot lines two standard deviations above and below the simple moving average

B) plot the simple moving average for the last 3 days, and the simple moving average for the last 30 days

C) plot lines two standard deviations above and below the stock's momentum

D) plot a horizontal line two standard deviations above the average price for the duration displayed in the chart, and another line two standard deviations below

Question 573: The main cause of 2007 housing crash was that banks were selling ____ CDO's consisting of ____ subprime loans

A) large , unstable

B) large, expensive

C) unstable , large

D) unstable, expensive

Correct answer: A

Question 574: According to the fundamental law of active portfolio management, which of the following generates a higher Sharpe ratio:

A) Lower alpha

B) Higher alpha

C) Constant alpha

D) Swiming naked

Correct answer: B

Question 575: If we combine several technical indicators to construct a stronger predictive model, _____.

A) our trading horizon tends to long and the more indicators the longer the trading horizon

B) we will only get a worse predictive system, as different indicators can give opposite trading signals

C) this model should generates better trading signals than a model of only one technical indicator

D) it has to be the weak form of the Efficient Market Hypothesis for our model to work

Correct answer: C

Question 576: Considering two different stocks A and B. Stock A has a Beta of 1.0 while Stock B has a Beta of 10.0. Both Stocks A and B return an Alpha of 1%. Based on purely technical analysis, are the two equally attractive? Is one Stock more attractive than the other?

A) A is more attractive.

B) B is more attractive.

C) Both are equally attractive

D) Neither is attractive.

Correct answer: A

Question 577: What is the formula for Information Ratio in terms of α (alpha) and/or β (beta)?

A) stdev(α(t)) / mean(β(t))

B) mean(α(t)) / stdev(β(t))

C) stdev(α(t)) / mean(α(t))

D) mean(α(t)) / stdev(α(t))

Correct answer: D

Question 578: What are decision variables in an portfolio optimization problem?

A) historical price data of the assets

B) portfolio min/max conditions for each asset

C) total returns and risk

D) portion of portfolio devoted to each asset

Correct answer: D

Question 579: What is the goal of portfolio optimization?

A) to design the combination of assets with goal of only reducing volatility

B) to design the combination of assets that produces the lowest risk for a specified target return

C) to design the combination of assets that produces the lowest risk irrespective of return

D) to design the combination of assets that maximizes returns

Correct answer: B

Question 580: While running a trading company, you are considering changing your operations to improve the Information Ratio (IR) for your trades. Which operations change below is the best option to optimize IR?

A) Make 1/16th as many trades, but trade 5 times as skillfully.

B) Make 16 times as many trades, but trade 1/5th as skillfully.

C) Make 10000 times as many trades, but trade 1/1000th as
skillfully.

D) No change: Make the same number of trades at the same skill level.

Correct answer: A

Question 581: Generally, a portfolio consisting of 2 stocks will have the lowest volatility if the covariance between the 2 stocks is:

A) Positive

B) Zero

C) Negative

D) Undefined

Correct answer: C

Question 582: If the semi-strong form of the efficient market hypothesis holds true, which of the following scenarios are not already reflected in the current stock price of XYZ Corporation?

A) In 2015, an audit of XYZ Corporation's accounting practices revealed fraudulent and intentionally deceptive activity.

B) One second prior, multiple ratings agencies reversed their previous downgrade of XYZ Corporation.

C) Susan reviewed internal lab analysis of XYZ Corporation's steel, and realized that three months of products are defective.

D) None of the above.

Correct answer: C

Question 583: Which of the following statement is true about reinforcement learning.

A) Daily Return is a potential reward that we would use to inform our algorithm for learning how to trade.

B) Daily Return is a description of our state that we ought to consider before we make a trade.

C) Holding Long is a description of our state that we ought to consider before we make a trade.

D) Both A and B

Correct answer: D

Question 584: Choose the correct option from below, that is sorted correctly from most public information to least public information.

A) Price/volume, Exogenous, Company insiders, Fundamental

B) Price/volume, Fundamental, Exogenous, Company insiders

C) Exogenous, Price/volume, Company insiders, Fundamental

D) Company insiders, Exogenous, Price/volume, Fundamental

Correct answer: B

Question 585: Which of the following terms is NOT a concept of Markov decision process:

A) state

B) reward

C) behavior

D) action

Correct answer: C

Question 586: Which of the following did NOT happen in the movie "The Big Short"?

A) Mark Baum interrupted a live presentation in the American Securitization Forum in Las Vegas.

B) Michael Burry sent an e-mail to restrict investors' withdrawals from Scion Capital.

C) Mark Baum was convinced to invest into CDOs after his pleasant meeting with the CDO manager.

D) Brownfield Fund collaborated with Ben Rickert to short AA tranches.

Correct answer: C

Question 587: Grinold's Fundamental Law of active portfolio management attempts to draw a metric for a fund manager's performance based on the skill of the fund manager and number of trading opportunities. According to the fundamental law, which of the following terms is best used to describe the performance metric of a fund manager?

A) Information Coefficient
B) Information Ratio
C) Sharpe Ratio
D) Buffett Index

Correct answer: B

Question 588: Which has the greatest effect on the information ratio?

A) Doubling information coefficient

B) Doubling breadth

C) Halving information coefficient

D) A and C

Correct answer: D

Question 589: Reinforcement learning methods are closely related to what other type of programming?

A) Static Programming

B) Dynamic Programming

C) Thermodynamic Programming

D) Fluid Programming

Correct answer: C

Question 590: Which one of the following is not correct regarding a write call option?

A) The max profit is the premium.

B) The max loss is not bounded.

C) You will break even if the spot price at expiration is the strike

price.

D) It is possible to make a profit if the spot price at expiration is above the strike price.

Correct answer: C

A) 1/5

B) 1/7

C) 1

D) 1/2

Correct answer: C

Question 591: If a trader increases his number of trades from 100 to 400, how much will his Information Ratio increase by?

A) 1 time

B) 2 times

C) 4 times

D) 8 times

Correct answer: B

Question 592: Which of the following is NOT true about the Efficient Market Hypothesis?

A) If the weak form is correct, technical analysis and fundamental analysis cannot successfully predict future prices.

B) If the semi-strong form is correct, technical analysis and fundamental analysis cannot successfully predict future prices.

C) If the strong form is correct, technical analysis and fundamental analysis cannot successfully predict future prices.

D) Hedge fund fees may incentivize better market efficiency.

Correct answer: A

Question 593: List out 1-2 outcome of married put？

A) if stock goes up, we lose the possible profit from premium

B) if stock goes down, the loss during the downturn will be capped

C) if stock goes up, the loss during the downturn will be capped

D) if stock goes down, we lose the possible profit from premium we paid

Correct answer: A

Question 594: Which one is NOT an information gain approach to determine the best feature in building decision tree?

A) Entropy

B) Sharpe Ratio

C) Correlation

D) Gini Index

Correct answer: B

Question 595: Here is a history of the 2 most recent interactions between the environment and an agent. Suppose that prior to seeing any history, the agent had arbitrarily assumed a baseline probability of 1/2 for transitioning to state S' = 3 from state S = 5, and a probability of 1/2 for transitioning to state S' = 7 from state S = 4. What would be the updated (correct) probability for transitioning to state S' = 7 from state S = 4 after this new information shown below is taken into account? Assume a discount factor of 1. ... Environment: Agent is in state 5. There are 2 possible actions. Agent: Takes action 2 Environment: Agent received a reinforcement of +20 units. Agent is now in state 4. There is 1 possible action. Agent: Takes action 1 Environment: Agent received a reinforcement of +100 units. Agent is now in state 7.

Question 596: Which of the following statements is "False" if the Strong version of the Efficient Market Hypothesis is true:

A) It is impossible to make money by holding a portfolio other than
the market portfolio.

B) Prices reflect all information public and private.

C) Investors can hold a portfolio of stocks that performs better than
the market portfolio.

D) Even insider information can't be leveraged to profit in the
market.

Correct answer: C

Question 597: Technical Analysis looks at which factors

A) Historical Price and volume

B) Dividends and earnings

C) Book value and cash flow

D) airspeed velocity of an unladen swallo

Correct answer: A

Question 598: Assume Buffet's algorithm is 3 times as smart as Simon's algorithm, and Simon trades 4 times as frequently as Buffet does. Which of the following sentences is correct based on the Fundamental Law?

A) Buffet's information ratio is three quarters of Simon's

B) Simon's information ratio is 1.5 times of Buffet's

C) If Simon trades 8 times as frequently as Buffet does, Simon's
information ratio will become larger than Buffet's

D) Buffet's information ratio is 1.5 times of Simon's

Correct answer: D

Question 599: Please select the statement that is NOT TRUE about the Efficient Markets Hypothesis.

A) There are 3 forms of the EMH (discussed in class): Weak, Semi-Strong, Strong

B) Semi-Strong EMH states that prices reflect all information public and private

C) Strong EMH states that prices reflect all information public and private

D) Weak EMH states that you cannot learn any new information about future prices from Technical Analysis

Correct answer: B

Question 600: In *The Big Short*, when Dr. Michael Burry (Christian Bale) realizes the mortgage bond market is fraudulent, what action does he take?

A) He restricts his investors' ability to withdraw their funds

B) He convinces Lehman Brothers and other banks to follow his strategy

C) He dissolves the fund

D) He alerts the SEC

Correct answer: A

Question 601: The following is the price for a stock 08-07 142.00 08-08 142.00 08-09 141.00 08-10 140.00 08-11 140.50 08-12 140.50 08-13 141.00 08-14 143.00 08-15 145.00 08-16 141.00 Please calculate the SMA of the stock at 0812 with a look back window of 4

A) 140
B) 140.05
C) 141
D) 141.05
Correct answer: B

Question 602: Using the semi-strong version of the Efficient Market Hypothesis, which of the following forms of analysis can be successful?

A) Fundamental Analysis

B) Technical Analysis

C) A and B

D) None of the above.

Correct answer: D

Question 603: Which of these is a reason that supports the Strong form of the Efficient Market Hypothesis?

A) Money managers cannot consistently outperform

B) Trading on technical indicators is not consistently profitable

C) Prices react to news slowly

D) Prices do not react to new information

Correct answer: A

Question 604: Which of the following should not be considered as part of the state description when mapping trading decisions to a reinforcement learning problem?

A) Shares Held

B) Bollinger Value

C) Simple Moving Average

D) Return from Trade

Correct answer: D

Question 605: You and Dr. Balch are both stock traders. He has 100 times higher information ratio than you and makes 10,000 times as many trades as you. Which one of you has higher skill (information coefficient) when it comes to trading stocks?

A) Dr. Balch has more skill.

B) You have more skill.

C) Both of your skills are equal.

D) Can't determine with given information.

Correct answer: C

Question 606: If weak form of the Efficient Market Hypothesis is true, which of the below person may profit from arbitrage?

A) A fund manager doing technical analysis

B) An investor with fundamental estimates of intrinsic value

C) Both

Correct answer: B

Question 607: Which of the following is not true about Q-learning?

A) The Q-value encodes the best possible value of a state

B) Either a state or a transition function needs to be fully defined

C) The Q-value encodes the best possible policy in terms of the action that should be taken

D) We do not need to store a rewards data structure

Correct answer: B

Question 608: The tactic that Michael Burry used to freeze his investors' money in his fund?

A) Side-Pocketing

B) Freeze Funding

C) Stop Transaction

D) Option 4

Correct answer: A

Question 609: Does the semi-strong EHM hypothesis states that the market portfolio is optimal?

A) Yes -As the price adjust quickly to all publicly available

information

B) Yes -Because insider information don't gives an advantage

C) No -As the price adjust quickly to all publicly available information

D) No -Because insider information don't gives an advantage

Correct answer: A

Question 610: Which of the following is false about Information Ratio (IR)

A) It evaluates risk-adjusted rate of return on investment portfolios

B) It measures the rate of return of a portfolio against a benchmark

C) It provides an indication of the consistency of a portfolio's performance

D) It is directly proportional to the skill of portfolio manager

Correct answer: A

Question 611: Fundamental analysis only considers historical price, volume, while technical analysis considers other factors like earnings, dividends, cash flow, and book value.

A) True

B) False

Correct answer: B

Question 612: Dr. Michael Burry demonstrated that the mortgage-backed securities market is not efficient. Which form of the EMH did he invalidate by using fundamental analysis to beat the banks?

A) The weak form

B) The semi-strong form

C) The strong form

D) B and C

Correct answer: D

Question 613: What is the primary advantage of using the Dyna architecture?

A) Simulating experiences avoids the discretization step in Q-learning.

B) Simulating experiences allows us to efficiently find the optimal discount factor.

C) Simulating experiences is less expensive than interacting with the real world.

D) Simulating experiences changes Q-learning from a model-based approach to a model-free approach.

Correct answer: C

Question 614: What is the the definition of the Information Ratio for the portfolio, which return is presented as following : $r(t) = beta * r\_m(t) + alpha(t)$, where $r\_m(t)$ is a market return. For simplicity assume that the daily return of the portfolio is daily_ret(t).

A) IR = mean(alpha(t))/std(alpha(t))

B) IR = mean(daily_ret(t))/ std(daily_ret(t))

C) IR = alpha(t)

D) IR is a number of trading opportunities per year

Correct answer: A

Question 615: In the context of Reinforcement learning as applied to trading, what part of the formal Markov Decision Problem corresponds to the Market.

A) The market is represented by state S

B) The market is represented by an action A

C) The market represents the reward function R [s, a]

D) The market represents the transition function T [s, a, s']

Correct answer: D

Question 616: Given a tech stock and a gold ETF, I would expect the covariance between these to be:

A) positive

B) negative

C) zero

D) efficient

Correct answer: B

Question 617: Assume Simon and Buffet are two hedge fund managers. Simon's Information Performance is twice better than Buffet. Based on Grinold's Fundamental Law, Choose the only statement that is TRUE below:

A) Simon has an algorithm run twice faster than Buffet

B) Simon has twice amount of breath than Buffet

C) Simon may have better skill but traded less than Buffet

D) Simon might trade less and worse skill than Buffet

Correct answer: C

Question 618: For the transition function, T defined as T[s,a,s'] in a Markov decision problem, which of the following is not true?

A) s' is the state we will end up in if we take action a on state s

B) the sum of all probabilities with which we could end up in
different states would be constant

C) s is the state we will end up in if we take action a on state s'

D) a is the set of actions that can be taken

Correct answer: C

Question 619: Which item could NOT be description of a possible state when mapping trading to the reinforcement learning model?

A) Bollinger band value

B) Holding stock long

C) Selling

D) Closing Price

Correct answer: C

Question 620: In *The Big Short*, how did Dr. Michael Burry (Christian Bale) handle the fact that no financial instruments existed to short mortgage bonds?

A) He ignored the housing bubble and went back to trading stocks

B) His hedge fund purchased real estate

C) He convinced banks to make the instruments, then sell them to him

D) He informed the SEC of the impending crisis

Correct answer: C

Question 621: Grinold's Fundamental Law states:

A) Performance = Breadth x √Skill

B) Performance = Skill x Breadth

C) Performance = √(Skill x Breadth)

D) Performance = Skill x √Breadth

Correct answer: D

Question 622: A software developer working for a hedge fund is tasked with creating a tool to predict future stock prices using only historical P/E ratio data. According to the semi-strong form of the Efficient Markets Hypothesis, this tool has a good chance of successfully predicting future stock prices.

A) True

B) False

Correct answer: B

Question 623: Information Ratio is proportional to ___ breadth

A) linear

B) square root

C) squared

D) not proportional

Correct answer: B

Question 624: Which one of the following is NOT an action, when we view trading as an RL problem?

A) Buy

B) Sell

C) Holding long

D) Hold

Correct answer: C

Question 625: Reinforcement learning addresses the Question of how an autonomous agent that senses and acts in its environment can learn to choose optimal actions to achieve its goals.

A) True

B) False

Correct answer: A

Question 626: 90% of all of Berkshire Hathaway's stocks are in how many stocks?

A) 3

B) 115

C) 12

D) 2310

Correct answer: C

Question 627: What form of the efficient market hypothesis states that it is impossible house fundamental analysis to choose stocks that will beat the market's returns?

A) weak

B) semi-strong

C) strong

D) semi-weak

Correct answer: B

Question 628: In the movie The Big Short what happens at the end as a reaction to the financial meltdown?

A) Hundreds of bankers and ratings agencies executives went to jail.

B) The SEC was completely overhauled.

C) The Congress broke up big banks and the mortgage and
derivatives industries were regulated.

D) Only one person, Kareem Serageldin from Credit Suisse was sent to jail.

Correct answer: D

Question 629: Which of following is not reinforcement algorithm?

A) Neunral Network

B) Q-learning

C) Deep Q Network

D) Sarsa

Correct answer: A

Question 630: Co-variance of stock ST2 w.r.t stock ST1 = 0.95 Co-variance of stock ST3 w.r.t stock ST1 = -0.95 Co-variance of stock ST4 w.r.t stock ST1 = -0.5 Portfolio of two volatile stocks having equal weight, resulting in lowest volatility without hampering returns would be

A) ST1 and ST2

B) ST1 and ST3

C) ST1 and ST4

D) None of the above

Correct answer: B

Correct answer: D

Question 631: Given two trade strategies with the same expected return (reward), trade strategy A involves a single trade with a Sharpe Ratio of 0.15, while trade strategy B involves 144 trades over a one-year period. What is the Sharpe Ratio of trade strategy B?

A) 55.8

B) 1.8

C) 0.06

D) 2.87

Correct answer: B

Question 632: In Jared Bennett's (Ryan Gosling) pitch of the Credit Default Swap to Mark Baum (Steve Carell) and the Front Point partners in *The Big Short*, what did the falling Jenga tower represent?

A) The worthlessness of the Capital Assets Pricing Model

B) The collapse of America's entire housing market

C) A sharp decrease in the price of Credit Default Swaps

D) The small salaries of CDO managers

Correct answer: B

Question 633: In one scene, Ryan Gosling pulls blocks from a Jenga tower. What concept he's trying to explain?

A) Increases in interest rates will trigger stock market crisis.

B) The global economy is on the edge of collapse.

C) The top-rated securities at the top end of the tower cannot stand
when the lower-rated securities fail and are removed from its
base.

D) The risk of betting against housing market is very high.

Correct answer: C

Question 634: Assuming that the Information Coefficient is inversely related to Breadth. Then select the choice which will have the maximum Information Ratio:

A) Information Coefficient = 4 * Breadth

B) Breadth = 4 * Information Coefficient

C) Information Coefficient = Breadth

D) Information Ratio has no relation with Information Coefficient and/or Breadth

Correct answer: A

Question 635: Assume the strong form of the Efficient Market Hypothesis is true. If information that a drug company's much-hyped future product has failed clinical trials is publicly announced, what will happen to the stock price of the company?

A) The price will drop as the price reflects the new information

B) The price will rise as investors decide to short the stock

C) The price will drop as investors decide to short the stock

D) The price will stay the same as the price already reflected that information

Correct answer: D

Question 636: How is the short in The Big Short different from how we have applied shorting in the class?

A) The trading firms in the movie had more cash and could leverage their shorted stock higher than individual investors

B) The short did not involve borrowing and selling an actual security

C) The hedge funds were able to short more than 1000 shares at a time

D) The short was based on technical indicators across multiple big bank stocks

Correct answer: B

Question 637: Two fund managers, Gordon Gekko and Jordan Belfort want to manage your retirement portfolio. Belfort boasts that he has a system that will give him a little information about every stock in the Russell 3000 to get an impressive return over the market. Gekko, on the other hand, claims he only looks at the Dow Jones Industrial Average, with 30 stocks, to match Belfort. How much more skill, i.e. information coefficient does Gekko have compared to Belfort?

A) 1000 times
B) Same
C) 9 times
D) 10 times

Question 638: Which of the following is NOT one of the assumptions of the Efficient Market Hypothesis (EMF)?

A) New information arrives randomly

B) Prices adjust quickly

C) Small number of investors operating in the market for profit

D) Prices reflect all available information

Correct answer: C

Question 639: Which of the following statements about Bollinger Bands(R) is FALSE?

A) The bands are drawn above and below the simple moving average

B) The width of the bands does not depend on the stock's volatility

C) Bollinger Bands can be used when implementing a mean reversion trading strategy

D) The width of the bands is determined using standard deviation

Correct answer: B

Question 640: According to Grinold & Kahn's "Fundamental Law of Active Management" , If the fund manager tries to improve the performance of the fund, what is the better choice that he/she can take?

A) find more alphas of stocks and diversify the portfolio to increase
the trading opportunities.

B) increase its leverage of the fund

C) invest more money on the same portfolio

Correct answer: A

Correct answer: C

Correct answer: B

Question 641: In 2007, Warren Buffett famously made a one million dollar bet against a hedge fund company that an S&P 500 index fund would outperform a collection of their actively managed hedge funds over the following decade. He won this bet in 2017 and in doing so, showed how difficult it can be for even the most experienced investors to outperform markets. What idea does the result of this bet seem to led credence to?

A) Gambler's fallacy
B) Efficient Markets Hypothesis (EMH)
C) Game Theory
D) Capital Asset Pricing Model (CAPM)

Correct answer: B

Question 642: What is the meaning of the discounted reward in the context of reinforcement learning?

A) The believed value of a future reward but in present time.

B) The future rewards value we are sure to gain over time.

C) The immediate reward minus a constant value.

D) The immediate reward plus a constant value.

Correct answer: A

Question 643: The Fundamental Law consists of the following:

A) Performance

B) Skill

C) Breadth

D) All of the above

Correct answer: D

Question 644: According to the Fundamental Law, which of the following is NOT true:

A) The information ratio is the sharpe ratio of excess return

B) Two equally skilled hedge funds can obtain the same performance with different breadths

C) It is easier to increase the breadth to get a higher performance

D) It is difficult to increase the skill to get a higher performance

Correct answer: B

Question 645: Currently, Bob and Jane have equivalent performance when trading stocks. Jane improves her performance by increasing skill 2fold, and increasing the breadth of her trading 9-fold. Bob wants to match Jane by also increasing his performance to equal Jane's new performance. However, he wants to only focus on increasing his breadth, not skill. By what factor does Bob need to increase the breadth of his trading in order to match Jane's new performance?

A) 6
B) 12
C) 36
D) 72

Question 646: Consider a robot moving across a grid trying to optimize its total discounted reward where each tile in the grid is worth a reward of 8. If lambda=0.5, what is the total discounted reward for a path where the robot moves in a straight line across 4 squares?

A) 12
B) 15
C) 16
D) 32

Correct answer: B

Question 647: Which technical factors does the weak version of EMH prohibit?

A) Technical

B) Fundamental

C) Insider

D) External

Correct answer: A

Question 648: According to Grinold's simplified Fundamental Law of Active Portfolio Management, a nine times increase in breadth (number of trades) should result in what change in performance?

A) A three times increase

B) A three times decrease

C) Zero Change encountered

D) A nine time increase

Correct answer: A

Question 649: Aaron is a skilled trader; he makes 100 trades a year and gets a return of 20%. Bob is relatively new to trading and only has about 1/20 the skill Aaron has. According to the Fundamental Law, how many trades will Bob have to make to also achieve a return of 20%?

A) 20000
B) 40000
C) 400
D) 2000

Correct answer: B

Question 650: You recently got a stock tip from your uncle about a hot new stock, HOT. However, because of bad tips that your uncle has given you in the past, you decide to invest in options instead of the basic stock. Assume that the stock price of HOT is currently $100 and that these contracts have no expiration date. Which of the following contracts should you purchase so that you will net exactly $100 if you exercise the option when HOT is exactly $110?

A) CALL contract with a premium of $1.00 and a strike price of $109

B) CALL contract with a premium of $1.00 and a strike price of $108

C) PUT contract with a premium of $1.00 and a strike price of $110

D) PUT contract with a premium of $1.00 and a strike price of $109

Question 651: Which criterion is used to evaluate risk for a given stock?

A) simple moving average

B) standard deviation of historical daily returns

C) maximum deviation from the simple moving average

D) mean of historical daily returns

Correct answer: B

Question 652: Which answer LEAST conforms to the EMH assumptions?

A) A stock that is traded by many investors

B) A stock that is traded by very few investors

C) A stock that is part of a major index (e.g. S&P500)

D) A stock that is traded on non-U.S. market (e.g. Nikkei)

Correct answer: B

Question 653: Weak version of Efficient Market Hypothesis says that trading based on insider-information can't beat the market/produce excess returns.

A) True

B) False

Correct answer: B

Question 654: Consider company XYZ and investor A Which of the following would be considered 'skill' by the The Fundamental Law in regards to the investor investing in this company?

A) Company XYZ reports good earnings

B) Company XYZ releases a new product that they claim will be popular among consumers

C) Investor A predicts XYZ will have an above average return on the year based off an analysis of its products and the corresponding market for these products

D) Investor A spends time researching company XYZ

Correct answer: C

Question 655: Which of the following acts as an "insurance policy" to insure the buyer against mortgage defaults?

A) Mortgage-backed security

B) Collateralized debt obligation (CDO)

C) Credit default swap (CDS)

D) Exchange-traded fund (ETF)

Correct answer: C

Question 656: Selling 1000 shares of JPM on 01/04/2008 is an example of what element in reinforcement learning.

A) A current state s

B) A goal state s'

C) An action

D) A reward

Correct answer: C

Question 657: When solving Markov Decision Problems (MDP) with reinforcement learning, all of the following are key components except:

A) A transition function: T[s,a,s']

B) A reward function: R[s,a,s']

C) A policy function $\pi(s)$

D) A reward function: R[s,a]

Correct answer: B

Question 658: In the movie The Big Short, why did not the rating agencies downgrade the subprime bonds since the underlying loans are defaulting?

A) They believed there is no correlation between the underlying
loans and the subprime bonds

B) Their model told them so

C) They refused to re-rate the same product in a short period of time

D) They want the banks' money

Correct answer: D

Question 659: Which of the following is not a form of the Efficient Market Hypothesis?

A) Semi-Weak

B) Weak

C) Semi-Strong

D) Strong

Correct answer: A

Question 660: Optimal portfolios that comprise the efficient frontier offers

A) The highest expected return for a defined level of risk

B) The lowest risk for a given level of expected return.

C) A and B

D) None of the above.

Correct answer: C

Question 661: The Big Short described this technique as something used by banks that would allow them to "bet" on the outcome of another "bet". This caused somewhat of a loop as more and more "bets" were placed on each subsequent "bet" created. What was the term used to describe this phenomena?

A) Mortage-backed security (MBS)

B) Subprime mortgage bond (SMB)

C) Synthetic collateralized debt obligations (CDO-Squared)

D) Credit default swap (CDS)

Correct answer: C

Question 662: According to Grinold & Kahn's "Fundamental Law of active portfolio management", If the fund manager tries to improve the performance of the fund, what is the better choice that he/she can take?

A) find more alphas of stocks and diversify the portfolio to increase the trading opportunities.

B) increase its leverage of the fund

C) invest more money

Correct answer: A

Question 663: Optimal portfolios that comprise the efficient frontier offers:

A) The highest expected return for a defined level of risk.

B) The lowest risk for a given level of expected return.

C) A and B

D) None of the above.

Correct answer: C

Question 664: If you were to draw a tangent line from the origin to the efficient frontier, what would you expect to find at the intersection?

A) The portfolio with the highest volatility for all the assets

B) The portfolio with the lowest volatility for all the assets

C) The portfolio with the highest Sharpe ratio for all the assets

D) The portfolio with the highest return for all the assets

Correct answer: C

Question 665: Harry Markowitz introduced which of the following:

A) Combining assets that are anti-correlated can result in a much lower risk portfolio.

B) the efficient markets hypothesis

C) risk is measured as standard deviation of daily returns

D) none of the above

Correct answer: A

Question 666: Suppose you have a trading reinforcement learning (RL) agent. Which of the following can be set as either a state or a reward for the RL process?

A) Holding Short

B) Daily Return

C) Sell

D) Holding Long

Correct answer: B

Question 667: What is the capital requirements for an ISDA to do high stakes trade?

A) 14,070,000,000

B) 110,000

C) 30,000,000

D) 15,100,000,000

Correct answer: A

Question 668: With regards to the Fundamental Law, what is summarized in the Information Coefficient?

A) Breadth

B) Beta

C) Skill

D) Performance

Correct answer: C

Question 669: Which of the following statements is true?

A) Optimal portfolio always includes all stocks with a very high positive correlation.

B) A good strategy while building a portfolio is to look for anti correlation in long term and positive correlation in short term between the individual stocks in the portfolio.

C) To plot the efficient frontier for a portfolio, the ray (line segment from the origin to a specific point on the frontier) with the steepest slope represents the maximum Sharpe ratio.

D) The optimized risky portfolio can be found in the efficient frontier by getting the point of the maximum return point on the efficient frontier.

Question 670: With Efficient Markets Hypothesis (EMH), which form says that doing fundamental analysis is acceptable?

A) Weak form

B) Semi-Weak form

C) Semi-Strong form

D) Strong form

Correct answer: A

Question 671: What are the forms of information available that lay the

Question 679: Which of the following are true for Fundamental Law of Active Management: A: Information Ratio is risk adjusted reward B: Transaction cost is accounted in Fundamental Law C: Trading opportunities must be independent D: Information Coefficient is constant and can be easily calculated

A) A and C

B) B and C

C) A,C and D

D) All the above

Correct answer: A

Question 672: The information ratio IR is summarized by:

foundation for the Efficient Market Hypothesis?

A) Skill

A) Past Prices

B) Breadth

B) Public Information

C) Performance

C) All Information including inside information

D) All of the above

D) All of the above

Correct answer: C

Correct answer: D

Question 674: Assume that you somehow have the same IC than Buffet. Buffet is known for having only 120 trading opportunities per year but you want to double Buffet's IR. How many trading opportunities do you need in order to achieve your goal?

A) 480

B) 240

C) 120000000

D) 480000000

Correct answer: A

Question 673: Your friend appears to be twice as skilled at picking stocks than you are, but he can only afford to invest in 1/15th of the stocks you have. However, being unemployed, he has the time to trade three times per day while you only have time to trade once per day. Who's the better performing investor, if any?

A) Your friend
B) You
C) Equal match
D) Not enough information

Correct answer: B

Question 676: What is NOT a reason to prefer trading options rather than stocks?

A) Trading options requires you to predict the stock in one direction in a timely manner.

B) Trading options allows you to "control" more money using less money.

C) You may lose less money by trading options if the stock goes to the opposite direction as predicted.

D) Trading stocks requires you to make a more specific bet in a relatively short amount of time.

Correct answer: A

Question 675: According to Grinold's Fundamental Law, if an investor wants to increase their performance, an increase of which measure impacts their performance the most?

A) Assets under Management

B) Skill

C) Cumulative Return of their Portfolio

D) Breadth

Correct answer: B

Question 678: Which of the following are true for Fundamental Law of Active Management: A: Information Ratio is risk adjusted reward B: Transaction cost is accounted in Fundamental Law C: Trading opportunities must be independent D: Information Coefficient is constant and can be easily calculated

A) A and C

B) B and C

C) A,C and D

D) All the above

Correct answer: A

Question 677: Suppose stocks A, B have the same cumulative return but negatively correlated daily returns, and our current portfolio has been allocated among these stocks to minimize risk. Compared to stock A, the portfolio will have

A) higher return, lower or same risk

B) same return, lower or same risk

C) higher return, higher risk

D) same return, higher risk

Correct answer: B

Question 680: Why were Collateralized Debt Obligation (or CDOs) offered by investment banks ticking time bombs, as per The Big Short?

A) CDOs were ETFs following the market.

B) CDOs contained high quality diverse range of assets

C) Investment banks started creating CDOs that included just the

lowest rated tiers of mortgage-backed securities

D) Investment banks started creating CDOs that included both lower and high tier of mortgage-back securities.

Correct answer: C

Correct answer: D

Correct answer: D

Question 681: Why was the number of mortgage-backed bonds increasing prior to the financial crisis?

A) Investors wanted to buy mortgage-backed bonds because they had
higher interest rates than other bonds

B) People were buying more houses than usual

C) The real estate market was conspiring to deceive banks

D) People were not paying off their home mortgages

Correct answer: A

Question 682: Which one doesn't make reinforcement learning different from other machine learning paradigms?

A) No labels in dataset

B) Utilize reward signal

C) Agent's actions affect the subsequent data it receives

D) Time really matters

Correct answer: A

Question 683: How many shares of the underlying stock does an option contract control?

A) less than 100

B) 100

C) more than 100

D) 1000

Correct answer: B

Question 684: Which of the following is not a disadvantage of buying options?

A) It is possible that you might lose more money than the premium that you paid for the option.

B) The premium is lost money, it's gone and you pay it immediately to another person when you acquire the option contract and you don't get it back no matter what happens to the stock.

C) Options have expiration dates.

D) With options you don't own the stock.

Correct answer: A

Question 685: How did Hedge fund manager MIchael Burry predicted in 2005 that US housing market will collapse by 2007?

A) He found large number of high risk subprime borrowers are
missing their payments that will cause mortgage market to
collapse.

B) He found an increasing pattern in number of foreclosures in US housing market.

C) He knew that housing market bubble will burst in a couple of years.

D) He found that a very larger number of mortgages were subprime and a huge percentage of those subprime mortgages was ARM (Adjustable rate mortgage).

Question 686: How did Hedge fund manager MIchael Burry predicted in 2005 that Mortgage backed securities will collapse by 2007?

A) He found large number of high risk subprime borrowers are missing their payments that will cause mortgage market to collapse.

B) He found an increasing pattern in number of foreclosures in mortgage market.

C) He was a smart man and had a hunch.

D) He found that a very larger number of mortgages were subprime and a huge percentage of those subprime mortgages was ARM (Adjustable rate mortgage).

Question 687: Which of the following comes closest to how Salina Gomez explains what a synthetic CDO is, in the movie "The Big Short".

A) As a bet, on a bet, on a bet...but on the same underlying security

B) As a fake CDO created by banks to defraud investors.

C) As CDOs representing technology related securities

D) None of the above

Correct answer: A

Question 688: Which statement is FALSE given the formula for Q for any state-action pair , given an experience tuple ?

A) s' is the resulting next state.

B) r = R[s, r] is the delayed reward for taking action a in state s.

C) α (alpha) is the the learning rate used to vary the weight given to
new experiences compared with past Q-values.

D) γ (gamma) is the discount factor used to progressively reduce the value of future rewards.

Correct answer: B

Question 689: Which of the following statements is True?

A) In Q Learning, the learning rate (alpha) used to what progressively reduce the value of feature rewards.

B) In Q Learning, the discount factor (gamma) used to vary the weight given to new experiences compared with past Q-values.

C) High values of learning rate means the future rewards were valued more.

D) None of the above.

Correct answer: D

Question 690: Which one of the following is NOT a technical indicator?

A) Simple Moving Average of price

B) Bollinger Band

C) Relative Strength Index

D) Dividend yield

Correct answer: D

Question 691: Which of the following is not one of the Moving Average indicators?

A) Simple Moving Average (SMA)

B) Exponential Moving Average (EMA)

C) Trend Moving Average (TMA)

D) Weighted Moving Average (WMA)

Correct answer: C

Question 692: Is it possible to construct a portfolio with a higher return and a lower risk that its underlying assets, using the Efficient Frontier?

A) No, the portfolio's return is upper bound by the highest return of any individual asset it holds.

B) No, the portfolio's risk is lower bound by the lowest risk of any individual asset it holds.

C) Yes, if you have the right mix of anti-correlated assets.

D) Yes, this mix is found on the peak of the efficient frontier.

Correct answer: A

Question 693: Which of the following statements is false?

A) Higher alpha generates higher Sharpe ratio

B) More execution opportunities provide higher Sharpe ratio

C) Sharpe ratio grows as a square root of breadth

D) The Information Coefficient is the Information Ratio times the
square root of breadth

Correct answer: D

Question 694: In The Big Short, Dr. Burry created the Credit Default Swap (CDS). What is a proper analogy for this product if you were Dr. Burry?

A) You are paying insurance for your won car, and Uncle Sam claims the money in the case of a crash.

B) You are paying insurance for Uncle Sam's car, and you claim the money in the case of a crash.

C) You are paying insurance for your own car, and you claim the money in the case of a crash.

D) You are paying insurance for Uncle Sam's car, and Uncle Sam claims the money in the case of a crash.

Correct answer: B

Question 695: In the Black-Sholes Formula, what does N(d2) mean?

A) probability of S < K

B) probability of S > K

C) probability of S < K

D) It means nothing.

Correct answer: B

Question 696: If an investor sells 100 shares os XYZ short at 100 and simultaneously writes one XYZ 100 put at 3. what is the maximum gain in this strategy?

A) $100/share

B) $103/share

C) $97/share

D) $3/share

Correct answer: D

Question 697: If we think price of the stock will go down dramatically, which one of the following 4 actions is generally the best?

A) Long a Call

B) Long a Put

C) Long a Call and Long a Put

D) Short a Call and Short a Put

Correct answer: B

Question 698: The fundamental law is IR = IC * root(breadth). Which of the following statements is correct regarding the fundamental law?

A) Only IC can be improved easily

B) Only Breadth can be improved easily

C) Both IC and Breadth can be improved easily

D) Neither IC or Breadth can be improved easily

Correct answer: B

Question 699: What is the proper definition for "subprime loan"?

A) A loan that offers a low or subprime interest rate.

B) A loan that is extended in duration but with increased interest.

C) A loan that is limited to only a fraction of the average mortgage loan.

D) A loan that is provided to subprime individuals or those with poor credit ratings (ability to repay)

Correct answer: D

Question 700: What is the goal of portfolio optimization?

A) To design a combination of assets that produces the lowest risk for a specified target return.

B) To design a combination of assets that produces the lowest overall Sharpe ratio.

C) To design a combination of assets that minimizes cumulative returns.

D) To design a combination of assets that maximizes portfolio volatility over time.

Correct answer: A

B) Both strategies violate Semi-Strong version of EMH.

C) Strategy 2 violates the semi-strong version of EMH and Strategy 1 violates the weak version of EMH.

D) Strategy 1 violates the semi-strong version of EMH and Strategy 2 violates the weak version of EMH

Correct answer: B

Question 701: If the weak form of the Efficient Market Hypothesis is correct, which of the following is true?

A) Inside Traders Cannot Succeed

B) Technical Analysis Cannot Work

C) Fundamental Analysis Cannot Work

D) Hedge Funds Cannot Succeed

Correct answer: B

Question 702: What makes an "Efficient Frontier" efficient?

A) It takes the least amount of time to decide whether to buy or sell.

B) It contains the portfolios with the lowest Sharpe ratios

C) It allocates as much money as an investor has available to invest.

D) It contains the portfolios with the lowest possible risk given a particular amount of return.

Correct answer: D

Question 703: Consider the following 2 investments strategies. 1. Warren Buffet, carefully analyzes fundamental of various stocks. And picks the stocks that are undervalued and has higher chances of beating the market in the long term. With this strategy, he is consistently able to beat the market. 2. An HFT (High-frequency trading) firm, using high-speed fibre cable is able to look at the order book of NYSE few milliseconds in advance of the other traders. By utilizing this arbitrage, the firm is able to trade accordingly and consistently generate the profits while beating the market. Which of the option from the following is true?

A) Strategy 1 violates the semi-strong version of EMH and Strategy 2 violates the Strong version of EMH

Question 704: Which of the following is not an EMH assumption:

A) Prices adjust rapidly

B) All available information is reflected by the prices

C) New information arrives randomly

D) The number of investors does not matter

Correct answer: D

Question 705: The _____ form of the efficient market hypothesis implies that there is little or nothing to be gained from technical analysis and fundamental data.

A) weak

B) semi-weak

C) semi-strong

D) strong

Correct answer: C

Question 706: Which choice is not changed in the reinforcement learning process?

A) State

B) Action

C) Reward

D) Policy

Correct answer: D

Question 707: You are in the "Coin-Flip Casino", where you can bet on biased coin flips with a 51% chance of winning and 49% chance of losing. Which of the following is an advantage of betting $1 on 1000 coins versus betting $1000 on 1 coin?

A) Increased expected return

B) Decreased expected return

C) Increased risk

D) Decreased risk

Correct answer: D

Question 708: For a Markov Decision Problem (MDP), it is assumed that the Agent knows the following in advance:
A) Set of States S and Set of Actions A
B) Transition Function T[s,a,s']
C) Reward Function R[s,a]
D) All of the above
Correct answer: D

Question 709: For Q-learning to converge we need to correctly manage the exploration vs exploitation tradeoff. Which of the following is the correct approach for the exploration strategy?

A) Every action needs to be tried sufficiently often in every state.

B) Every action needs to be tried as few times as possible to avoid duplication.

C) The number of times that every action is tried needs to be balanced with how frequently the algorithm exploits that action.

D) None of the above.

Correct answer: A

Question 710: What are the correct forms of the Efficient Markets Hypothesis?

A) "Weak", when the prices are not the deterministic function of the past

B) "Strong", when the prices adjusted to publicly available information

C) "Strongest", when the prices reflect all public and private information

D) All of the above

Correct answer: A

and trade based on how you think the price will move when the information is made public.

Correct answer: C

Question 711: To double information ratio in The Fundamental Law of Investment Management, one needs to:

A) double skill metric

B) double information coefficient

C) increase number of independent forecasts by the factor of sqrt(2)

D) all of the above

Correct answer: D

Question 712: Which of the following may be used for technical analysis?

A) A company's book value

B) A company's stock price

C) A company's intangible value

D) A company's intrinsic value

Correct answer: B

Question 713: Which set of data is a good candidate for reinforcement learning to outperform other types of machine learning?

A) A record driving actions from 100 trips in a car.

B) Patient treatment records, for dosage recommendation within one hour.

C) Mars rover control logs from previous mission.

D) Character movement data from 1000000 games of Pac-man.

Correct answer: D

Question 714: What game did Jared Vennett (Ryan Gosling's character) use when he first pitched credit default swaps to Mark Baum (Steve Carell character) and his team?

A) Jenga

B) Hangman

C) Battleship

D) Chess

Correct answer: A

Question 715: For the Strong form of the Efficient Market Hypothesis, which is true?

A) Future prices can be predicted by analyzing historical prices
(technical analysis)

B) Future prices can be predicted using insider information.

C) Future prices can be predicted using public information
(fundamental analysis).

D) Future prices can not efficiently be predicted using technical
analysis, fundamental analysis, or insider information.

Correct answer: D

Question 716: Reinforcement Learning Discount Factor

A) is specified in the interval [-1,0]

B) is used to account for uncertainties about future rewards

C) develops linearly with time

D) chooses farsightedness over shortsightedness

Correct answer: B

Question 717: If you were to buy a stock using bollinger bands as an indicator, when would be a good time to buy the stock?

A) When the stock is 2 standard deviations below the normal price

B) When the stock is 2 standard deviations above the normal price

C) When the stock is 1 standard deviation below the normal price

D) When the professor says it's a good idea

Correct answer: A

Question 718: Which form of the efficient market hypothesis claims that only information that is not readily available to the public can help investors increase their returns above that of the general market?

A) Weak Form
B) Semi-strong Form
C) Strong Form
D) Very Strong Form

Correct answer: B

Question 719: All of the following could be considered "state" in a reinforcement learning system:

A) Daily returns, Bollinger value, simple moving average, selling short

B) Daily returns, Bollinger value, buy order

C) Return from a single trade, daily returns, Bollinger value

D) Buy order, sell order

Correct answer: A

Question 720: If you believe that the strong form of the Efficient Market Hypothesis is true, which investing strategy would you be most likely to choose?

A) Consider fundamental factors such P/E ratio, assets, and liabilities, and trade stocks based on how you think they will do in the future.

B) Analyze technical factors such as historical price and volume using machine learning and trade stocks based on your model's predictions of future prices.

C) Buy and hold a passively-managed index fund that mirrors the performance of the overall market, such as SPY.

D) Obtain private information known only to company executives

D) Disagree because Strong Form specifically states that the markets are NOT efficient

Correct answer: B

Question 721: Which of the following forms of the Efficient Markets Hypothesis claim that even insider trading will not yield excessive returns?

A) Weak

B) Semi-Strong

C) Strong

D) None of the above

Correct answer: C

Question 722: Which of the following is not considered in the Fundamental Law?

A) Performance

B) Rewards

C) Skill

D) Breadth

Correct answer: B

Question 723: You are in discussion with a friend who has used Machine Learning to build several trading models. He explains that he can prove that the markets are strong form efficient (according to the Efficient Market Hypothesis) because he is able to use price data to generate positive alpha. You agree / disagree with this statement because:

A) Agree because the strong form EMH does not consider the use of Machine Learning Techniques which are proven to generate Alpha

B) Disagree because in the strong form EMH it is impossible to generate positive alpha regardless of the method used

C) Agree because in the strong form EMH you can use price data to generate positive alpha and Machine learning uses only price data to discover Patterns

Question 724: Which of the following is correct about Bollinger bands

A) More volatile stocks need bands nearer to the mean

B) More volatile stocks need bands farther away from the mean

C) The common distance of the bands from the mean is 20 standard deviation

D) Bollinger bands are perfect

Correct answer: B

Question 725: Increasing the information coefficient is proportional to increasing the information ratio, whereas increasing the breath affects the information ratio only as a square root. Which law is this an example of?

A) Murphy's Law
B) Foundation Law
C) Buffett's Law
D) Fundamental Law

Correct answer: D

Question 726: How is a simple moving average calculated?

A) The change in price between a start and end date is calculated and then divided by the number of days between the two dates, including the start date but excluding the end date.

B) Recent closing prices are added and then divided by the number of time periods in the calculation average.

C) Average gain of up periods during the specified time frame is divided by the average loss of down periods during the specified time frame.

D) Blue! Nooooo!!!

Correct answer: B

Question 727: What is the equation for momentum?

A) momentum[t] = price[t] / price[t -n] -1

B) momentum[t] = price[t] / price[t - n:t].mean() -1

C) momentum[t] = price[t].mean()

D) momentum[t] = price[t] -SMA[t] / 2 * stdev[t]

Correct answer: A

Question 728: Please select all true statements regarding reinforcement learning.

A) Always requires policy to conduct learning

B) uses a decision tree to go from observations about an item to conclusions about the item's target value

C) is an area of machine learning concerned with how agents ought to take actions in an environment so as to maximize cumulative reward.

D) Requires a pre-defined model

Correct answer: C

Question 729: Which pair represents two assumptions that EMH (Efficient Market Hypothesis) makes.

A) Current Price reflects all available information, Information arrives randomly

B) Few investors seeking profit, Prices adjust quickly

C) Information arrives randomly, Current Price reflects only some information

D) Few investors seeking profit, Information does not arrive randomly

Correct answer: A

Question 730: What is an ISDA Agreement ?

A) It represents an agreement that lets an investor sit at the big boy table and make high-level trades not available to stupid amateurs.

B) It is a legal document which regulates credit support (collateral) for derivative transactions.

C) A collateralized debt obligation is named for the pooled assets

D) An agreement which allows a firm to do business with US government directly

Correct answer: A

Correct answer: B

return stocks.

Correct answer: C

Question 731: Which of the following is not considered a technical indicator?

A) Relative Strength Index (RSI)

B) P/E Ratio

C) 20-Day Moving Average

D) Bollinger Band®

Correct answer: B

Question 732: A credit default swap is most similar to

A) An insurance policy

B) A short sale

C) A hedge fund

D) A bundle of mortgages

Correct answer: A

Question 733: Which is not a correct assumption of Efficient Market Hypothesis (EMH)?

A) Large number of investors

B) New information arrives randomly

C) Prices adjust slowly

D) Prices reflect all available information

Correct answer: C

Question 734: According to the Fundamental Law, could it be likely for an inexperienced frequency trader to yield similar returns compared to a trader such as Warren Buffet?

A) Yes, because as the volume of trades increases, the reward opportunity increases by a power of 2.

B) Yes, because the sheer number of transactions could offset a lack of skill.

C) No, because Warren Buffet is the World's most prolific frequency trader.

D) No, because the more transactions that occur, the more likely it is to suffer losses.

Question 735: What is the formula for Grinold's Fundamental Law?

A) Performance = Skill * sqrt(Breadth)

B) Skill = Performance * sqrt(Breadth)

C) Breadth = Skill * sqrt(Performance)

D) Performance = Breadth * sqrt(Skill)

Correct answer: A

Question 736: Which of the following scenarios might be an indication that it is a good time to buy a certain stock?

A) Stock price crosses the simple moving average.

B) Stock Price is at the top Bollinger Band and momentum is negative.

C) Stock Price is at the bottom Bollinger Band and momentum is positive.

D) None of the above.

Correct answer: C

Question 737: Simple moving average can be calculated over multiple window sizes. If SMA with a window size of 20 crosses higher than the SMA with a window size of 50, what conclusion can you draw about the current stock price?

A) It is trending upwards

B) It is trending downwards

C) Cannot draw any conclusions

Correct answer: A

Question 738: You are a hedge fund manager, and you want to improve your performance. Your best friend, a former ML4T student, says that you should consider the The Fundamental Law of active portfolio management when making your decision. What possible things can you do to improve your fund's performance?

A) Decrease the breadth of your portfolio, and invest in a few, safe stocks.

B) Invest in the same amount of stocks, but pick high-risk high-return stocks.

C) Increase the breadth of your portfolio, and invest in a wider variety of stocks.

D) Decrease the breadth of your portfolio, and pick high-risk high-

Question 739: The S&P 500 is up more than 200% since March 2009. If you had bought shares of the companies that were members of the S&P 500 in March 2009 in proportion to their representation in the index in March 2009, What would be your return since March 2009 till today ?

A) More than 200% because that is how much the S&P 500 rose

B) Less than 200%

C) Cannot say because of Survivorship bias

D) Exactly 200%

Correct answer: C

Question 740: A very efficient market with no insider information would benefit an investor most who:

A) Uses "strong form" of EMH and tries to get insider information.

B) Uses "strong form" of EMH and tries to befriend journalists to take advantage of public information

C) Uses "weak form" of EMH and utilizes industrial knowledge of product segments to identify companies with undervalued intrinsic value

D) Uses "weak form" of EMH to do technical and fundamental analysis

Correct answer: C

Question 741: Which option would provide the most effective form of technical analysis in a trading strategy:

A) Exponential Moving Average (EMA) with a span of 10 days

B) A combination of Bollinger Bands and Momentum with a window of 10 days

C) A combination of Bollinger Bands and Momentum with a window of 252 days

D) A combination of a company's market value and book value

Correct answer: B

Question 742: When comparing a stock's price to Bollinger Bands, when the price of a stock goes above the upper band, then comes back down, this is a technical indicator to do what?

A) Buy the stock

B) Do nothing

C) Sell the stock

D) It's impossible for the price to go above the upper band

Correct answer: C

Question 743: A company's current stock price is 50 dollar per share. Current long-term corporate bond yield is 5%. The dividend yield has been 10% for 10 years. An executive just sold her shares for 49 dollars per share. Suppose the market is strong-form efficient, what would be the dividend this year?

A) 2.5

B) 5

C) 4.9

D) 2.45

Correct answer: C

Question 744: Weak EMH prohibits which of the following indicators?

A) Technical

B) Fundamental

C) Insider

D) None of the above

Correct answer: A

Question 745: Consider the following statements: Stock prices adjust immediately to new public information, so investors can use neither fundamental nor technical analysis to make profits on the market. However, insider information may help investors. Which of the following best describes these statements?

A) Weak form of Efficient Market Hypothesis

B) Semi-weak form of Efficient Market Hypothesis

C) Strong form of Efficient Market Hypothesis

D) Super-strong form of Efficient Market Hypothesis

Correct answer: B

Question 746: What form of the efficient markets hypothesis implies that book value is not available to predict market performance?

A) Weak

B) Weakly-Strong

C) Strong

D) All the above

Correct answer: C

Question 747: What form of the efficient markets hypothesis implies that book value is not available to predict market performance?

A) Weak

B) Weakly-Strong

C) Strong

D) All the above

Correct answer: C

Question 748: What technical indicator is used to compute Bollinger Bands?

A) Momentum

B) Simple moving average (SMA)

C) Price over SMA

D) MACD

Correct answer: B

Question 749: What would be the best reason to use ema (exponential moving average) compared to sma (simple moving average)?

A) Performance: ema is faster to compute than sma

B) Clarity: the exponential create more range between values than sma

C) Weight: ema prioritize recent price in its average

D) Accuracy: ema gives better result than sma

Correct answer: C

Question 750: Which one of the following versions of the efficient market hypothesis states that even insider knowledge cannot give any trade advantage?

A) Weak

B) Semi-Strong

C) Strong

D) Super-Strong

Correct answer: C

Question 751: Which of the following is true about Information Ratio?

A) Information Ratio is a measure of manager performance over time.

B) Information Ratio is ratio of excess returns to standard deviation of excess returns.

C) Information Ratio is ratio of returns to standard deviation of returns.

D) Both A and B

Correct answer: D

Question 752: When you enter Tucker Balch's Coin Toss Casino, what is the better strategy? Bet a dollar at 1000 booths or bet 1000 at one single booth?

A) It doesn't matter because both strategies have the same expected return

B) Betting a dollar at 1000 booths because you lower risk

C) Betting 1000 at a single booth because it is higher reward

Correct answer: B

Question 753: Simple Moving Average and Standard Deviation of a stock's price are technical indicators of what, respectively:

A) Volatility, and Momentum

B) Momentum, and Volatility

C) Both are indicators of Volatility

D) Both are indicators of momentum

Correct answer: B

Question 754: Which statement is False?

A) Reinforcement learning can be understood using the concepts of agents, environments, states, actions and rewards

B) Reinforcement learning solves the difficult problem of correlating immediate actions with the delayed returns they produce.

C) Reinforcement learning assumes knowledge of an exact
mathematical model of the MDP unlike classical dynamic
programming methods.

D) Reinforcement learning in systems with unknown environment where the agent must trade off efficiently between exploration(long-term optimization) and exploitation (short-term optimization)

Question 755: Weak form market efficiency

A) is compatible with technical analysis

B) implies that the expected return on any security is zero

C) involves price and volume information

D) incorporates semi-strong form efficiency

Correct answer: C

Question 756: Consider the following the following environment: { [+2] [+0] [-1] [START] [-1] [-1] [+1] [+3] } where a player beginning at "START" can move one position (left or right) per unit time and receive the award or penalty at that position. What is the maximum reward that can be achieved under the following conditions: -finite time horizon of 3 -finite time horizon of 4 -an infinite time horizon

A) +2, +3, +2

B) +1, +2, infinite

C) +2, +3, +3

D) infinite, infinite, infinite

Correct answer: B

Question 757: Which of the following statements does NOT support Semi-Strong Form EMH?

A) The market quickly adjusts prices in response to new public information.

B) Future stock prices cannot be predicted using historic prices.

C) Exogenous information can be used to predict stock prices.

D) Private information on a company can help an investor profit in the market.

Correct answer: C

Question 758: Which of the following will increase the performance the most

A) Increase the information coeffient by 4 times

B) Increase the breadth by 4 times

C) Decrease the information coeffient to 1/4

D) Decrease the breadth to 1/4

Correct answer: A

Question 759: Below is a list containing the daily prices of a stock over ten days. Assuming that we denote the first day as day 0, at which of the days below is the momentum at it's maximum? Consider 3 days when calculating momentum. [8.0, 10.0, 9.5, 10.0, 10.0, 8.0, 7.0, 7.5, 8.0, 10.0]

A) 3
B) 4
C) 8
D) 9

Question 760: What do you call an option which has no intrinsic value and will be worthless if expired?

A) At-the-money option

B) In-the-money option

C) Out-of-the-money option

D) Put option

Correct answer: C

Correct answer: D

Question 761: What is a covered call strategy?

A) write a stock & write a call

B) buy a stock & buy a call

C) buy a stock & write a call

D) write a stock & buy a call

Correct answer: C

Question 762: Which of the following is not true of the weak form of the efficient market hypothesis?

A) Future prices cannot be predicted by analysis of historical prices

B) Silent on fundamental or insider information

C) Essentially impossible to make money by holding a portfolio other than the market portfolio

D) Can not profit by looking at historical price

Correct answer: C

Question 763: Which of the following is not a key assumption of the Efficient Markets Hypothesis?

A) There are a large number of investors acting in the market for profit.

B) New information arrives linearly.

C) Prices adjust quickly.

D) Current prices reflect all available information.

Correct answer: B

Question 764: If you buy an option contract (Call Option) at $100 per share and pay a premium of $2.00 per share, at the expiration day, the stock price is $90, how much have you gain?

A) -$300

B) $100

C) -$200

D) -$100

Correct answer: C

Question 765: What is true about the mortgage in the mortgage-backed security (MBS)?

A) The mortgages are sold to a group of individuals that packages, the loans together into a security that investors can buy.

B) The mortgages are sold to only single individual that packages, the loans together into a security that investors can buy.

C) The mortgages are sold to investors and each one is sold independently.

D) All of the above are correctly.

Correct answer: A

Question 766: Reinforcement learning is suitable for what scenario below?

A) Clustering unlabeled plants by size and height

B) Classifying healthy vs unhealthy cells

C) Optimizing inventory space in warehouse

D) Drawing a regression line between two datasets

Correct answer: C

Question 767: In "The Big Short", which of the following is NOT discussed as contributing to the housing market collapse?

A) Landlords raising rent for their tenants

B) Bonds built out of mortgage loans

C) Homeowners not paying their mortgages on time

D) Falling house prices

Correct answer: A

Question 768: The Fundamental Law: Suppose there are two information sources. The IC for each source is 0.01 and the correlation between two sources is 1. what is the skill level of the combined sources?

A) 0.02
B) 0.01
C) 0.015
D) 0

Correct answer: B

Question 769: If I have an option contract for 200 shares of AAPL with a strike price of $200 and the current price of AAPL is $180, what should I do?

A) Buy 200 shares of AAPL now!

B) Sell 200 shares of AAPL now!

C) Wait and see if the price of AAPL goes up before your contract
runs out to decide what to do

D) Wait and see if the price of AAPL goes down before your contract runs out to decide what to do

Correct answer: C

Question 770: Based on the Fundamental Law, an equal increase in performance and in investment skill signifies that:

A) The number of trading opportunities increases by the square root
of the performance increase.

B) The number of trading opportunities stays constant.

C) The number of trading opportunities decreases by the square root
of the performance increase.

D) The number of trading opportunities increases by the square of the investment skill.

Correct answer: B

Question 771: What is the Fundamental Law of Active Management by Grinold and Kahn?

A) Information Ratio = Information Coefficient * squareroot(Number of trading opportunities per year)

B) Information Ratio = Information Coefficient / Number of trading opportunities per year

C) Information Ratio = Information Coefficient * Number of trading opportunities per year

D) Information Ratio = squareroot(Information Coefficient) * Number of trading opportunities per year

Correct answer: A

Question 772: You're considering several portfolio allocations, including: portfolio A, which yields a 25% return with a Sharpe ratio of 2.0, B which yields a 50% return with a SR of 1.0, C which yields a 25% return with a SR of 1.0 and D which yields a 10% return with a SR of 2.0. You plot the potential portfolios' risk and return and the resulting efficient frontier. Where would portfolio C lie?

A) Above/to the left of the efficient frontier

B) On the efficient frontier

C) Below/to the right of the efficient frontier

D) Not enough information to know for sure

Correct answer: C

Question 773: Suppose two portfolios have the same average return, the same standard deviation of return but portfolio A has a higher beta than portfolio B. According to the Sharpe ratio, portfolio A's performance is:

A) better than B

B) poorer than B

C) sameas B

D) not enough information

Correct answer: C

Question 774: A hedge fund engaging in technical analysis do think that

A) EMH Weak form is correct but Semi-strong is not

B) EMH Semi-strong form is correct but strong form is not

C) EMH strong form is correct

D) EMH is incorrect regardless of which form

Correct answer: D

Question 775: Which of the following statement is incorrect?

A) The fundamental law is designed to give us insight into active management.

B) The fundamental law is designed to give us insight into passive management.

C) The fundamental law connects breadth and skill to the information ratio

D) All of the above are correct.

Correct answer: B

Question 776: Which of the following is true when comparing reinforcement learning and linear regression?

A) Reinforcement learning tells us when to sell our stock, while linear regression does not

B) Reinforcement learning tells us which stock will yield the biggest return over a certain period, while linear regression does not

C) Reinforcement learning tells us the uncertainty of the price change, and so does linear regression

D) Reinforcement learning is a faster model to train when compared to linear regression

Correct answer: A

Question 777: RR labs' stock price on Sept 10, 2018, was $200. On Sept 11, 2018, RR Labs announced that they invented a drug that could cure stage 3 cancer. On Sept 12, 2018, the stock price of RR labs was $200. What do you infer about the informational efficiency of the markets?

A) Weak form

B) Semi-Strong Form

C) Strong Form

D) Both A and B

Correct answer: A

Question 778: What is reinforcement learning?

A) System is given no data and learns based on outcomes from interactions with its environment

B) System is given a dataset along with correct output and must find a relationship in the dataset

C) System is given a just a dataset and must find a relationship in the dataset

D) System generates random numbers in an endless loop

Correct answer: A

Question 779: To triple the information ratio of our hedge fund we can ...

A) Increase our Breadth by 3 times

B) Decrease our Information Coefficient by 3 times

C) Decrease our Breadth by 3 times

D) Increase our Breadth by 9 times

Correct answer: D

Question 780: Based on Mean Variance Optimization, you should look for stocks with:

A) anti-correlation in short terms and positive-correlation in long terms

B) anti-correlation in short terms and positive-correlation in short terms

C) anti-correlation in long terms and positive-correlation in long terms

D) anti-correlation in long terms and positive-correlation in short terms

Correct answer: A

Question 781: Which of the following is NOT an assumption of the Efficient Markets Hypothesis?

A) Small number of investors operating in the market for profit

B) New information arrives randomly

C) Prices adjust quickly Correct answer:

D) Prices reflect all available information

Correct answer: A