Set 1 Questions

1. The arbitrage opportunity which is based on the idea that the value of the whole should equal the sum of the parts is *best* known as:
   A. dominance.
   B. value additivity.
   C. law of one price.

2. The arbitrage-free value of option-free bonds is the:
   A. sum of present values of the future values using par rates.
   B. sum of present values of the expected future values using the benchmark spot rates.
   C. sum of the future values of the bond based on yield to maturity.

3. The yield for a 3.5% coupon 5-year annual pay bond in Karachi (Bond X) is 2.8%. The same bond sells for PKR 101.98 in Lahore. Is there an arbitrage opportunity and if so, how can it be exploited?
   A. There is no arbitrage opportunity.
   B. There is an arbitrage opportunity which can be exploited by buying the bond in Karachi and selling in Lahore.
   C. There is an arbitrage opportunity which can be exploited by buying the bond in Lahore and selling in Karachi.

The following information relates to questions 4 - 6.

Benchmark Par Curve

Maturity (Years)	Par Rate	Bond Price
1	1.00%	100
2	2.00%	100
3	3.00%	100

Bond A is 3-year 4% coupon annual-pay bond. It has the same risk and liquidity as the benchmark and sells for $102.8286 today to yield 3%.

4. Calculate the one-year spot rates from the given term structure? The spot rates for each year's cash flow are:
   A. 1.00%, 2.00%, 3.00%.
   B. 2.10%, 3.20%, 4.50%.
   C. 1.00%, 2.01%, 3.04%

5. Which of the following statements is *most likely* correct regarding the arbitrage-free price of Bond A given the term structure above?
   A. Bond A's cash flows must be discounted by its yield to maturity to determine the arbitrage-free price.
   B. Bond A's cash flows must be discounted by the spot rates to obtain the arbitrage-free price.
   C. Bond A must be discounted by the yield to maturity of a three-year benchmark bond to find the arbitrage-free price.

6. Using the answers of questions 4 and 5, the arbitrage-free price of Bond A is *closest* to:
   A. $102.8286
   B. $100.0000
   C. $100.8682

7. An interest rate tree represents interest rates based on:
   A. an interest rate model and an assumption about volatility of interest rates.
   B. both positive and negative interest rates.
   C. higher and lower forward rates determined by changing volatility at each node.

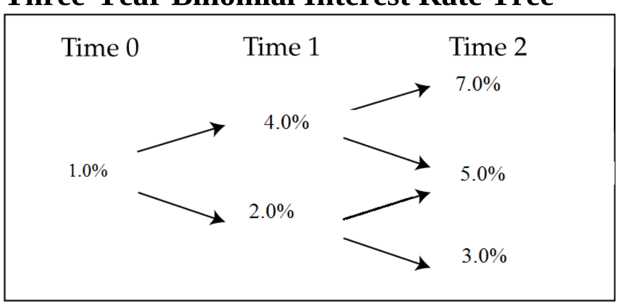
8. The interest rate model is based upon:
   A. pathwise valuation.
   B. Pascal Triangle.
   C. a lognormal model of interest rates.

9. The method(s) *most likely* used to estimate interest rate volatility is (are):
   A. the historical volatility method only.
   B. the implied volatility approach only.
   C. the historical volatility method or the implied volatility approach.

10. A lognormal model of interest rates insures which of the following?
   A. Higher volatility at higher rates.
   B. Constant volatility across high or low rates.
   C. Lower volatility at higher rates.

The following information relates to questions 11 - 13.

Three-Year Binomial Interest Rate Tree



Implied Values (in $) for Bond Z: A 4% coupon, three-year, annual pay bond based on the above interest rate tree

Time 0	Time 1	Time 2	Time 3
V_0	Node 1–1=102.1942	Node 2-1=101.1963	Node 3-1=104.0
	Node 1-2 =105.9699	**Node 2-2 = ?**	**Node 3-2**=104.0
		Node 2-3=104.9709	Node 3-3=104.0
			Node 3-4=104.0

11. Which of the following statements about the missing value at Node 2-2 is correct? Node 2-2 can be derived by discounting by the implied one-year forward rates and the average values of:
    A. Node 1-2 and Node 1-1.
    B. Node 2-1 and Node 2-3.
    C. Node 3-2 and Node 3-3.

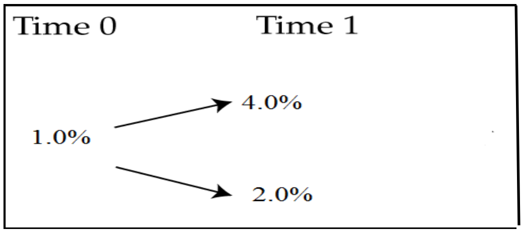
12. Based on the above information, Bond Z's price in dollars at Node 2-2 is *closest* to:
    A. 104.20.
    B. 103.05.
    C. 105.00.

13. The correct price for Bond Z in dollars at Time 0 is *closest* to:
    A. 103.05.
    B. 107.05.
    C. 100.00.

14. The process of calibrating a binomial interest rate tree *least likely* involves:
    A. Fitting the interest rate tree to the current yield curve by selecting interest rates to produce benchmark bond values given a volatility assumption.
    B. Finding the interest rates in the tree numerically by an iterative process.
    C. Changing volatility assumption at every node to determine forward rates for valuation of a benchmark.

The following information relates to questions 15 - 17.

Two-Year Binomial Tree to Calibrate



Benchmark Par Curve

Maturity (Years)	Par Rates	Bond Price
1	1.00%	100
2	2.00%	100
3	3.00%	100

One-Year Spot Rates of Par Rates

Maturity (Years)	One-Year Spot Rate
1	1.00%
2	2.01%
3	3.04%

One-Year Implied Forward Rates

Maturity (Years)	Forward Rate
Current 1-year rate	1.000%
One-year rate, one-year forward	3.03%
One-year rate, two years forward	5.13%

Zero-coupon bond prices: $P_1 = 0.9901$, $P_2 = 0.9610$, $P_3 = 0.9141$

15. Consider the binomial tree given above. Assume volatility is 15%, and the lower one-year forward rate is 2.580%. The higher one-year forward rate using the lognormal model of interest rates is *closest* to:
    A. 3.00%.
    B. 3.48%.
    C. 4.05%.

16. If the lower one-year rate = 2.580%, and the higher rate = 3.48%, the correct price for a two-year zero is *closest* to:
    A. 0.9610.
    B. 0.9901.
    C. 0.9141.

17. If the volatility assumption is changed from 15% to 20%, the implied forward rates will *most likely*:
    A. spread out on the tree.
    B. collapse to the implied forward rates from the yield curve.
    C. be unaffected by the volatility change.

18. If the binomial tree is correctly calibrated for benchmark bonds, it can be used to price:
    A. option-free bonds.
    B. mortgage-backed securities.
    C. both option-free bonds and mortgage-backed securities.

19. An option-free bond that is valued using spot rates should give:
    A. the same value as pricing by using the binomial lattice.
    B. a value higher than the price given by a binomial interest rate tree.
    C. a value lower than the price given by using a binomial lattice.

20. Pathwise valuation calculates bond value by:
    A. backward induction using the interest rate paths specified by the binomial lattice.
    B. calculating value for each possible interest rate path and averaging these values across paths.
    C. simulating a large number of potential interest rate paths.

21. The following are four interest rate paths and the possible forward rates along those paths. Using pathwise valuation the present value for the second path for a three-year zero-coupon bond in dollars is *closest* to:

Path	Rate Year 1	Forward Rate Year 2	Forward Rate Year 3
1	1.000%	3.483%	6.817%
2	1.000%	3.483%	5.050%
3	1.000%	2.580%	5.050%
4	1.000%	2.580%	3.741%

A. 91.08
B. 89.60
C. 90.04

22. Monte Carlo method is used for:
    A. confirming the security value given by the binomial lattice.
    B. simulating a significant number of interest rate paths to determine the effect on the security value.
    C. determining the value of the security by using the least number of interest rate paths.

23. Consider a 30-year mortgage-backed security with monthly fixed payments. Which of the following steps are *least likely* involved in valuation with the Monte Carlo method?
    A. Simulate 500 one-month interest rate paths, under a volatility assumption and probability distribution.
    B. Produce spot rates from the simulated interest rates and calculate cash flows along each path.
    C. Determine the median of all the present values.

24. To ensure that the Monte Carlo model is arbitrage-free and fits the current spot curve a constant is added to all interest rates. The model is then known as:
    A. mean reversed.
    B. fitted to implied yield curve forward rates.
    C. drift adjusted.

25. The Monte Carlo method is *least likely* used for valuation of:
    A. option-free bonds.
    B. mortgage-backed instruments.
    C. securities whose cash flows are path dependent.

Set 1 Solutions

1. B is correct. The arbitrage opportunity which is based on the idea that the value of the whole should equal the sum of the parts is *best* known as value additivity. The law of one price states that if there are no transaction costs, then two goods that are perfect substitutes must sell for the same current price. Dominance is a type of arbitrage opportunity, according to which if a financial asset has a riskfree payoff in the future then it must have a positive price today. Sections 2, 2.2. LO.a.

2. B is correct. The arbitrage-free value of an option-free bond is calculated by adding the present values of the expected future cash flows of the bond using the benchmark spot rates. Section 3. LO.a.

3. C is correct. Bond X's price in Karachi is 103.22. (N = 5, I/Y = 2.8, PMT = 3.5, FV = 100, CPT. PV = 103.22.) The market price in Lahore is 101.98. An arbitrage opportunity exists. This can be exploited by buying bonds for 101.98 in Lahore and selling in Karachi for 103.22, making 1.24 per 100 of bonds traded. Section 2.2. LO.a.

4. C is correct. 1-year spot rate r(1) is the same as 1-year par rate = 1% i.e. $r(1) = 1.00\%$. Using bootstrapping to calculate the 2-year spot rate r(2) and 3-year spot rate r(3). For r(2):
$$100 = \frac{2}{(1.01)} + \frac{102}{[1+r(2)]^2} = \Longrightarrow 100 - \frac{2}{1.01} = \frac{102}{[1+r(2)]^2} \Longrightarrow r(2) = 2.01\%$$

   Similarly for r(3):
$$100 = \frac{3}{(1.01)} + \frac{3}{(1.0201)^2} + \frac{103}{[1+r(3)]^3} \Longrightarrow r(3) = 3.04\%.$$ Section 3. LO.b.

5. B is correct. The arbitrage-free price of Bond A is found by discounting each cash flow of the bond by the spot rate of the same maturity as the date of the cash flow. Section 3. LO.b.

6. C is correct. Using r(1) = 1.00%; r(2) = 2.01%; r(3) = 3.04% to calculate the correct arbitrage-free price of Bond A:
$$P_0 = \frac{4}{(1.01)} + \frac{4}{(1.0201)^2} + \frac{104}{(1.0304)^3} = \$102.8682.$$ Section 3. LO.b.

7. A is correct. An interest rate tree is a representation of interest rates based on an interest rate model and an assumption about interest rate volatility. Section 3.1. LO.c.

8. C is correct. The binomial interest rate tree structure is based on the lognormal model. Section 3.1. LO.c.

9. C is correct. Interest rate volatility can be estimated using historical data. Interest rate volatility can also be estimated using the implied volatility method. Section 3.2. LO.c.

10. A is correct. A lognormal model of interest rates insures two properties: non-negativity of interest rates and higher volatility at higher interest rates. Section 3.1. LO.c.

11. C is correct. The value at Time 2 for Node 2-2 is calculated by backward induction, using the interest rate of 5.0% from the interest rate tree (as the discount rate) and average values of Node 3-2 = 104 and Node 3-3 = 104 plus the coupon payment of 4. Section 3.3. LO.d.

12. B is correct. Price of Bond Z at Node 2-2 (Time 2) is calculated as follows:
    $0.5 \times \left[\left(\frac{104}{1.05}\right) + \left(\frac{104}{1.05}\right)\right] + 4 = \$103.0476$. Section 3.3. LO.d.

13. A is correct. Calculating the price of Bond Z a three-year 4% coupon annual-pay bond at Time 0. No coupon payment is added at T_0, the average of Time 1 values discounted at 1.0%. $V_0 = 0.5 \times \left[\left(\frac{102.1942}{1.01}\right) + \left(\frac{105.9699}{1.01}\right)\right] = \$103.0515$. Section 3.3. LO.d.

14. C is correct. Volatility is kept constant. Two rates at each node must be consistent with the volatility assumption, the interest rate model, and the observed market value of the benchmark bond. A & B are the steps involved in the construction of a binomial interest rate tree. Section 3.4. LO.e.

15. B is correct. According to the lognormal model of interest rates the higher rate =
    $F_{1,2u} = (F_{1,2d}) \times e^{2\sigma}$ where $\sigma = 15\%$;
    $F_{1,2u} = 2.580\% \times e^{0.3} = 3.483\%$. Section 3.4. LO.e.

16. A is correct. Given price of a zero based on the lower rate = 2.580% and the higher rate = 3.483% the price is given by the following equation: $[(0.5)(1/1.0258) + (0.5)(1/1.03483)]/1.01 = 0.9610$. The price can also be calculated using the 2-year spot rate: $P_2 = 1/1.0201^2 = 0.9610$. Section 3.4. LO.e.

17. A is correct. Implied forward rates are impacted by volatility change. If the volatility assumption is changed to a **higher** value, say 20%, the possible implied forward rates will spread out on the tree. If the assumed volatility is **lowered** from 15%, the interest rates will collapse. Section 3.4. LO.e.

18. A is correct. The interest rate tree is fit to the current yield curve by choosing interest rates that result in benchmark bond value. By doing this, the bond value is arbitrage free and will correctly price option-free bonds. Section 3.4. LO.f.

19. A is correct. An option-free bond when priced by discounting with spot rates produces the same value as obtained by using the arbitrage-free binomial lattice. Section 3.5. LO.f.

20. B is correct. Pathwise valuation calculates the value of a bond for each interest rate path (from the list of potential interest rate paths specified by a binomial tree) and takes the average of these values across paths. Section 3.6. LO.g.

21. A is correct. Using pathwise valuation the present value for the second path is calculated as follows: $100/(1.01)(1.03483)(1.0505) = \$91.08$. Section 3.6. LO.g.

22. B is correct. Monte Carlo method is used for simulating a very large number of interest rate paths to determine the effect on the value of the security. Section 4. LO.h.

23. C is correct. Monte Carlo method involves the following steps for a monthly fixed payment bond:
    - Simulate numerous one-month interest rate paths under a volatility assumption and probability distribution.
    - Generate spot rates from the simulated interest rates.
    - Determine cash flows for each interest rate path.
    - Calculate the present value for each path.
    - Calculate the **average present value** across all interest rate paths.

    Section 4. LO.h.

24. C is correct. In order to produce the benchmark bond values equal to the market prices, so that the Monte Carlo model fits the current spot curve and is arbitrage free, a constant called a drift term is added. The model after using this technique is said to be drift adjusted. Section 4. LO.h.

25. A is correct. Monte Carlo method is often used for valuation of a security with path dependent cash flows, such as mortgage-backed securities. Section 4. LO.h.

Set 2 Questions

Andy Dimon, a fixed income analyst at a hedge fund, is responsible for pricing individual securities and identifying arbitrage opportunities in the market. Dimon is familiar with the process of stripping whereby individual cash flows of a government bond are traded as zero-coupon securities. He therefore, evaluates government bonds that have been stripped. Currently Dimon is assessing a 3% annual-pay government bond maturing in three years quoted in the market at $102.85. Dimon uses the data given below to value the bond:

Table 1: Par rates and Spot rates

	Year 1	**Year 2**	**Year 3**
Par rate	1.00%	2.00%	3.00%
Spot rate	1.00%	2.01%	3.04%

1. Given the interest rates in Table 1 and the bond's market price, the arbitrage opportunity *most likely* identified by Dimon is:
   A. buying only year 1 strip and selling the years 2 and 3 strips.
   B. buying all the strips and selling the bond.
   C. buying the bond and selling all the strips.

2. Samina Khan senior analyst is explaining to her interns the valuation of bonds using the binomial interest rate tree. She makes the following statements:
   Statement 1: In the valuation process, the interest rate tree generates interest rate dependent cash flows, and supplies interest rates to discount these cash flows.
   Statement 2: The binomial interest rate tree is based on two assumptions: the first is an interest rate model such as the lognormal model of interest rates and the second is volatility of interest rates.
   Statement 3: Volatility can be estimated by observing prices of interest rate derivatives. The lognormal model is useful as it can have negative interest rates.
   Which of Khan's statements regarding binomial interest rate tree is *least likely* correct?
   A. I.
   B. II.
   C. III.

3. Mike Davis, senior analyst, asks Maria Lopez, recently hired intern, to use a binomial interest rate tree to calculate the value of a bond. Lopez evaluates a three-year, $100 par value, 2.00% annual-pay coupon bond using the binomial interest rate tree framework given in Table 2.

   Table 2: Three-Year Binomial Interest Rate Tree

Time 0	**Time 1**	**Time 2**
1.000%	1.62%	1.78%
	1.20%	1.32%
		0.98%

Using the data in Table 2 and the backward induction method, the value of the bond is *closest* to:
A. 102.81.
B. 102.19.
C. 103.01.

The following information relates to questions 4 – 5.

Annis Qawan, director research ILT Investment Bank, makes the following comments regarding calibration of the binomial interest rate tree to his team members:

Comment 1: "Calibrating an interest rate tree requires an iterative process and interest rates are determined numerically.

Comment 2: There are two possible rates - the upper and lower rates. These rates must be consistent with the volatility assumption, the interest rate model, and the observed market value of the benchmark bond.

Comment 3: The cash flows of the bond are discounted using the interest rate tree, and if this doesn't produce the correct price, then another benchmark bond is selected and the process is repeated."

Qawan then asks Jawad Hamid, an analyst, to calculate the value of a bond using a binomial interest rate tree and compare it to its value determined using spot rates. The bond he selects for the comparison is non-benchmark, option-free, has three years to maturity and an annual-pay coupon rate of 5%. The coupon rate is below the coupon rate of a benchmark bond of the same maturity. The yield curve is currently downward sloping. Hamid's analysis shows that the spot rates generate a value equal to the market price of the bond, but the interest rate tree methodology produces a higher value.

4. Which of Qawan's comments on calibrating a binomial interest rate tree is *least likely* correct?
   A. Comment III.
   B. Comment II.
   C. Comment I.

5. The bond value calculated by Hamid using the binomial interest rate will *most likely* be:
   A. lower than the value from the spot rate methodology.
   B. equal to the value from the spot rate methodology
   C. higher than the value from the spot rate methodology.

6. Juna Barette, senior portfolio manager at a security firm, discusses the Monte Carlo method for pricing securities that are interest rate path dependent with the firm's research director, Cybil Humbe. Barette states, "I believe by using the Monte Carlo method and increasing the number of simulations to (say) 1,500, will produce an average present value across all scenarios equal to the true fundamental value of the securities." Humbe agrees and increases the number of paths while valuing a benchmark bond. The result is a value that does not equal the market price of the bond.

Humbe should *most likely* correct the problem that she has encountered when using the Monte Carlo simulation by:
A. decreasing the number of simulations.
B. adding a constant to all interest rates on all paths.
C. changing the volatility assumption.

7. Jeremy Kabelo, a newly hired fixed income analyst at a securities firm, makes the following statements regarding valuation of option-free bonds, “My method will calculate the same values for option-free bonds as those produced by a binomial tree. Special programming skills are needed to properly calibrate a binomial tree to match benchmark risk-free bond prices, which makes the binomial approach quite costly to adopt.” Is Kabelo *most likely* correct when comparing his method to the binomial tree approach?
A. No, he is incorrect about calibrating a binomial tree.
B. Yes.
C. No, the two approaches will likely give different results.

8. Jehan Abbas, fixed income trader, explains about the no arbitrage principle involved in bond valuation when using a binomial interest rate tree to an intern. “The arbitrage-free principle in a financial market is based on the following conditions:
I: Two risk-free securities with the same payoff and timing must sell for the same price.
II: Any portfolio of securities must have the same price as the sum of the prices of the individual securities in the portfolio.
III. Higher risk securities must give higher payoff than lower risk securities.”
Which of Abbas’ conditions regarding arbitrage-free valuation is *least likely* correct?
A. I.
B. II.
C. III.

9. Sonia Batla, senior fixed income analyst, is interviewing Hina Abdullah for the post of a junior analyst. Batla asks Abdullah to determine the value of a 3.5% annual-pay coupon option-free bond of $100 par value with two years remaining to maturity using the following calibrated binomial interest rate tree.

Calibrated Binomial Interest Rate Tree

Time 0	Time 1	Time 2
2.0%	4.6%	8.2%
	3.4%	6.1%
		4.5%

The value of the two-year bond calculated by Abdullah is *closest* to:
A. 102.4
B. 101.0
C. 103.6

10. Amal Hakim, senior quantitative analyst, discusses the pathwise valuation approach with her supervisor. Hakim states, “In this type of valuation, you would specify all of the possible interest rate paths that are specified by a binomial tree and value the bond along each path.

The value of the bond is then calculated as the average of the values across all paths. For example, for the 3-year bond you would need to calculate its value for 2^3 or 8 different paths." Is Hakim *most likely* correct in her interpretation of pathwise valuation?

A. Yes.
B. No, the values are weighted by the probability.
C. No, she is incorrect about the number of paths needed to value a 3-year bond.

11. Aki Hiroko, senior fixed income analyst, compares the Monte Carlo approach to the binomial tree approach, while conducting a training session of junior analysts. "The Monte Carlo approach is different than the binomial framework due to the following reasons:
I: No calibration is required in the Monte Carlo approach, whereas the binomial tree requires calibration.
II: The Monte Carlo approach is often applied when cash flows are path dependent, whereas the binomial tree approach only allows one expected cash flow per node.
III: The Monte Carlo approach randomly generates interest rate paths and values the security across those paths, whereas the binomial tree approach values the security across all possible interest rate paths on the tree.
Hiroko is *least likely* correct with respect to:
A. Reason I.
B. Reason II.
C. Reason III.

Set 2 Solutions

1. B is correct. The value of the government bond using spot rates is calculated as follows: $\frac{3}{1.01}+\frac{3}{1.0201^2}+\frac{103}{1.0304^3}=100.0031$. Therefore, an arbitrage opportunity exists whereby strips could be purchased for \$100.0031 and reconstituted into the bond, which could be sold for \$102.85. Section 2.3, 3. LO.b.

2. C is correct. The lognormal model of interest rates insures two properties: non-negativity of interest rates, and higher volatility at higher interest rates. A & B are correct statements. Section 3.1. LO.c.

3. B is correct. The value of the three-year bond is calculated as follows:
   Value at Time 2
   $0.5\times\left[\frac{102}{1.0178}+\frac{102}{1.0178}\right]+2=102.2162$
   $0.5\times\left[\frac{102}{1.0132}+\frac{102}{1.0132}\right]+2=\ 102.6711$
   $0.5\times\left[\frac{102}{1.0098}+\frac{102}{1.0098}\right]+2=103.0101$

   Value at Time 1
   $0.5\ \times\left[\frac{102.2162}{1.0162}+\frac{102.6711}{1.0162}\right]+2=102.8105$
   $0.5\times\left[\frac{102.6711}{1.012}+\frac{103.0101}{1.012}\right]+2=103.6211$

   Value at Time 0. No coupon payment at Time 0.
   $0.5\times\left[\frac{102.8105}{1.01}+\frac{103.6211}{1.01}\right]=\mathbf{102.1939}$. Section 3.3. LO.d.

4. A is correct. If the interest rates do not produce a correct price, then another pair of forward rates are selected and the process is repeated. The benchmark bond is not changed. B & C are correct comments. Section 3.4. LO.e.

5. B is correct. Both methodologies will produce the same result. The binomial tree is based on implied one-year forward rates derived from spot rates and a no arbitrage condition. Therefore an option-free bond should have the same value whether using the spot rate curve or the binomial tree. Section 3.5. LO.f.

6. B is correct. Monte Carlo method produces a benchmark bond value equal to its market value only by chance. A constant is added to all interest rates on all paths such that the average present value of the benchmark equals its market value. Changing volatility assumption or increasing/decreasing paths does not mean that the model will give a value closer to the market value. Section 4. LO.h.

7. A is correct. To calibrate a binomial interest rate tree, Solver function in Excel is typically used which is relatively easy to do. Therefore, a knowledge of special programming techniques is not required and no great expense is incurred. Section 3.4. LO.e.

8. C is correct. The principle of no arbitrage applies to risk-free securities and portfolios, not risky ones. Lack of dominance (I) and value additivity (II) must hold for a market to be arbitrage free. The relationship between risk and return does not apply to arbitrage-free principle. Section 2.1-2.2. LO.a.

9. B is correct.
   Value at Time 1:
   $0.5 \times \left[\frac{103.5}{1.046} + \frac{103.5}{1.046}\right] + 3.5 = 102.4484.$
   $0.5 \times \left[\frac{103.5}{1.034} + \frac{103.5}{1.034}\right] + 3.5 = 103.5967.$

   Value at Time 0:
   $0.5 \times \left[\frac{102.4484}{1.02} + \frac{103.5967}{1.02}\right] = 101.0025.$ Section 3.3. LO.d.

10. C is correct. Valuing a 3-year bond requires $2^2 = 4$ interest rate paths. The discount rate for cash flows occurring in the first period is known with certainty and forms the base of the interest rate tree. The one-year forward rates for one, and two years from now are unknown and described by the branches of the tree. For a 2-year tree, interest rates can increase or decrease from where they are after one year, so there are *uu*, *ud*, *du*, and *dd* paths. Section 3.6. LO.g.

11. A is correct. Monte Carlo simulation randomly generates interest rate paths that will correctly value benchmark bonds only by chance. A constant, known as a drift term, is added to every interest rate on every simulated path to calibrate the simulation so that the values estimated for benchmark bonds equal their market prices. B & C are correct statements. Section 4. LO.h.