

Personal Finance, 6e (Madura)
Chapter 3 Applying Time Value Concepts

3.1 The Importance of the Time Value of Money

1) The time period over which you save money has very little impact on its growth.

Answer: FALSE

Diff: 1

Question Status: Previous edition

2) The time value of money concept can help you determine how much money you need to save over a period of time to achieve a specific savings goal.

Answer: TRUE

Diff: 1

Question Status: Previous edition

3) Time value of money calculations, such as present and future value amounts, can be applied to many day-to-day decisions.

Answer: TRUE

Diff: 1

Question Status: Revised

4) Time value of money is only applied to single dollar amounts.

Answer: FALSE

Diff: 1

Question Status: Previous edition

5) Your utility bill, which varies each month, is an example of an annuity.

Answer: FALSE

Diff: 1

Question Status: Previous edition

6) In general, a dollar can typically buy more today than it can in one year.

Answer: TRUE

Diff: 1

Question Status: Revised

7) An annuity is a stream of equal payments that are received or paid at equal intervals in time.

Answer: TRUE

Diff: 1

Question Status: Previous edition

8) An annuity is a stream of equal payments that are received or paid at random periods of time.

Answer: FALSE

Diff: 2

Question Status: Previous edition

9) Time value of money computations relate to the future value of lump-sum cash flows only.

Answer: FALSE

Diff: 2

Question Status: Revised

10) There are two sets of present and future value tables: one set for lump sums and one set for annuities.

Answer: TRUE

Diff: 1

Question Status: Previous edition

11) Money received today is worth more than the same amount of money received in the future. This is true because

A) money received today can grow at a compounded rate.

B) future inflation will devalue your current investments.

C) all goods and services will cost more in the future.

D) unique investment opportunities exist today, which may not be available in the future.

Answer: A

Diff: 2

Question Status: Revised

12) The time value of money refers to

A) personal opportunity costs such as time lost on an activity.

B) financial decisions that require borrowing funds from a bank.

C) changes in interest rates due to changes in the supply and demand for money in the national economy.

D) the difference in the value of money depending on when it is received.

Answer: D

Diff: 2

Question Status: Revised

13) The time value of money implies that a dollar received today is worth _____ a dollar received tomorrow.

A) more than

B) less than

C) the same as

D) Insufficient data to determine the answer.

Answer: A

Diff: 1

Question Status: Revised

14) The concept of the time value of money is based on

- A) the level of unemployment.
- B) taxes.
- C) interest earned over time
- D) the Dow Jones Industrial Average.

Answer: C

Diff: 1

Question Status: Revised

15) An ordinary annuity can be defined as

- A) a series of unequal payments received or paid at equal intervals at the beginning of each period.
- B) a series of equal payments received or paid at equal intervals of time at the end of each period.
- C) a lump sum.
- D) intermittent payments for ordinary expenses.

Answer: B

Diff: 2

Question Status: Revised

16) Which of the following it **not** an annuity?

- A) Equal monthly payments to your investment account
- B) Lottery winnings of \$100 per month for life
- C) Mortgage payments for a fixed-rate loan
- D) Monthly utility bills

Answer: D

Diff: 2

Question Status: Revised

17) The concept of time value of money is important to financial decision making because

- A) it emphasizes earning a return of interest on the money you invested.
- B) it recognizes that \$1 today has more value than \$1 received a year from now.
- C) it can be applied to future cash flows in order to compare different streams of income.
- D) all of these.

Answer: D

Diff: 2

Question Status: Previous edition

18) The concept that a dollar received today has more value than a dollar received in the future because of the interest it can earn is called the _____.

Answer: time value of money

Diff: 1

Question Status: Previous edition

19) A stream of equal payments either received or paid at equal time intervals is a(n) _____.

Answer: annuity

Diff: 1

Question Status: Previous edition

20) Which stream of cash flows is not an example of an annuity?

A) Fixed rate mortgage payment

B) Mortgage payment where the interest rate is reset annually

C) 48 month car payment

D) Interest payment on a 10 year Treasury bond

Answer: B

Diff: 1

Question Status: New

21) Time value of money is important because

A) you do not want to wait a long time to get paid.

B) deflation eats away at the value of a dollar.

C) the present value of future cash flows is affected by inflation.

D) time value of money is not as important to a person's finances as budgeting.

Answer: C

Diff: 2

Question Status: New

3.2 Future Value of a Dollar Amount

1) When money earns interest on interest, it is said to be compounding.

Answer: TRUE

Diff: 1

Question Status: Previous edition

2) When money accumulates interest, it is said to be discounting.

Answer: FALSE

Diff: 2

Question Status: Previous edition

3) In the tables for the future value of a single sum, the future value factors are all less than one.

Answer: FALSE

Diff: 3

Question Status: Previous edition

4) In order to maximize the use of your money, you may want to delay payment of your bills slightly beyond their due dates.

Answer: FALSE

Diff: 2

Question Status: Previous edition

5) By paying bills electronically, instead of mailing a check you can pay later and still ensure on-time payment.

Answer: TRUE

Diff: 1

Question Status: New

6) Compounding is the process of obtaining present values; discounting is the process of obtaining future values.

Answer: FALSE

Diff: 2

Question Status: Previous edition

7) The periodic interest rate, the number of periods in which your money will be invested, and the initial payment amount, must be known to estimate the future value using a financial calculator.

Answer: TRUE

Diff: 3

Question Status: Revised

8) The process of earning _____ on interest is referred to as compounding.

A) dividends

B) interest

C) an annuity

D) cash outflows

Answer: B

Diff: 1

Question Status: Revised

9) The earning of interest on interest over time is called

A) an annuity.

B) an ordinary annuity.

C) compounding.

D) present value.

Answer: C

Diff: 1

Question Status: Revised

10) Which of the following is **not** an example of a future value?

A) The balance in your checking account today

B) A savings account balance in 5 years

C) A mortgage balance in 10 years

D) The value of a retirement account in 20 years

Answer: A

Diff: 1

Question Status: Revised

11) To determine how much you must save each year to have enough for your daughter's college education, you would use the present value of \$1 tables.

Answer: FALSE

Diff: 2

Question Status: Previous edition

12) Which of the following decisions would involve the use of the future value of \$1?

- A) Your brother buys your car and offers to pay you \$500 now or \$1,500 in two years.
- B) You win a lawsuit and are offered a lump-sum payment today of \$100,000 or \$15,000 a year for 20 years.
- C) Your father and mother wish to deposit enough money on the date of your high school graduation to enable you to take a \$7,000 cruise when you graduate from college in 4 years.
- D) You want to have \$1,000,000 in order to retire at age 55, but need to know how much you will need to deposit each year from now until your 55th birthday.

Answer: A

Diff: 3

Question Status: Revised

13) Everything else being equal, the _____ the interest rate, the _____ the final accumulation of money.

- A) higher; higher
- B) lower; lower
- C) higher; lower
- D) Both A and B are correct.

Answer: D

Diff: 2

Question Status: Previous edition

14) Byron is investigating a mutual fund that claims that \$1,000 today will be worth \$5,000 in five years. What is he solving for?

- A) Present value
- B) Future value
- C) Interest rate
- D) Payment

Answer: C

Diff: 3

Question Status: Previous edition

15) In order to take advantage of the time value of money you should do all of the following **except**

- A) pay bills electronically so you can delay payments and still ensure on-time payment.
- B) pay bills a little later than the due dates to take advantage of month-ending interest on your savings account.
- C) use settings on many bill-paying Web sites that allow you to set a future date for payment once you receive a bill.
- D) make use of your money while you have it, but always make payments by the due dates.

Answer: B

Diff: 2

Question Status: Revised

16) To determine how long it would take an investment to double at 10 percent, you could scan down the 10% column until you reach a factor of approximately 2.0 on the _____ table.

- A) Present value of \$1
- B) Future value of \$1
- C) Present value of an annuity
- D) Future value of an annuity

Answer: B

Diff: 2

Question Status: Revised

17) If you invest \$12,000 today at an interest rate of 10%, how much will you have in 10 years?

- A) \$31,128
- B) \$25,940
- C) \$13,860
- D) \$40,712

Answer: A

Explanation: A) $FVIF = 2.594 \times \$12,000 = \$31,128$

Diff: 3

Question Status: Previous edition

18) Mr. Berkey deposits \$10,000 in a money market account at his local bank. He receives annual interest of 8% for 7 years. How much interest will he earn on his investment during this time period?

- A) \$17,140
- B) \$7,140
- C) \$17,180
- D) \$7,180

Answer: B

Explanation: B) $FVIF = 1.714 \times \$10,000 = \$17,140 - \$10,000 = \$7,140$

Diff: 2

Question Status: Revised

19) If I deposit a sum of money today and want it to double in 10 years, I will need to receive an interest rate of slightly above _____.

Answer: 7%

Diff: 1

Question Status: Revised

Use the following two columns of items to answer the matching questions below:

A) the process of earning interest on interest

B) a series of equal payments received or paid at equal intervals

C) a factor multiplied by today's savings to determine how the savings will accumulate over time

D) a business calculator that performs PV/FV calculations

20) future value interest factor

Diff: 1

Question Status: Revised

21) financial calculator

Diff: 1

Question Status: Revised

22) annuity

Diff: 1

Question Status: Revised

23) compounding

Diff: 1

Question Status: Revised

Answers: 20) C 21) D 22) B 23) A

24) The process of earning interest on accumulated interest or paying interest on accumulated interest due is called

A) simple interest.

B) compounding.

C) future value.

D) present value.

Answer: B

Diff: 1

Question Status: New

25) Assume you owe a large balance on your credit card and only pay the monthly minimum payment equal to 1% of the balance. If the annual interest rate on the credit card is 18%, how many years will it take you to pay off the balance assuming you do not make any additional charges to the card?

- A) 7.8 years
- B) 5 years
- C) you will never pay off the balance
- D) not enough information is provided to determine the time

Answer: C

Diff: 3

Question Status: New

3.3 Present Value of a Dollar Amount

1) The process of obtaining present values is known as discounting.

Answer: TRUE

Diff: 1

Question Status: Previous edition

2) The process of obtaining present values is known as compounding.

Answer: FALSE

Diff: 2

Question Status: Previous edition

3) The present value interest factor (PVIF) becomes lower as the number of years increases.

Answer: TRUE

Diff: 3

Question Status: Revised

4) The same tables can be used to figure future values and present values of \$1.

Answer: TRUE

Diff: 3

Question Status: Previous edition

5) The process of obtaining _____ values is referred to as discounting.

- A) present
- B) future
- C) current
- D) inflated

Answer: A

Diff: 1

Question Status: Previous edition

6) Susie wants to know how much she needs to save today to have \$5,000 in five years. Which of the following tables should she use?

- A) Present value of \$1
- B) Present value of an ordinary annuity
- C) Future value of \$1
- D) Future value of an ordinary annuity

Answer: A

Diff: 2

Question Status: Revised

7) Sandy wants to know how much she needs to save today to have \$5,000 in five years at a 7% interest rate. Which of the following tables should she use?

- A) Present value of \$1
- B) Present value of an ordinary annuity
- C) Future value of \$1
- D) Future value of an ordinary annuity

Answer: A

Diff: 2

Question Status: Revised

8) Which of the following decisions would involve the use of the present value of \$1?

- A) Your brother buys your car and offers to pay you \$500 per year for three years or \$1,500 in two years.
- B) You win a lawsuit and are offered a lump-sum payment today of \$100,000 or \$15,000 a year for 20 years.
- C) Your father and mother wish to deposit enough money on the date of your high school graduation to enable you to take a \$7,000 cruise when you graduate from college in 4 years.
- D) You want to have \$1,000,000 in order to retire at age 55, but need to know how much you will need to deposit each year from now until your 55th birthday.

Answer: C

Diff: 3

Question Status: Revised

9) Future and present values are dependent upon all of the following **except**

- A) time.
- B) the interest rate.
- C) a present or future value interest factor, depending on the problem.
- D) annual income.

Answer: D

Diff: 1

Question Status: Revised

10) If you are presented with an offer to accept payment now or a greater amount in the future, you would use (assuming you can invest the money at a known rate)

- A) present value of \$1.
- B) future value of \$1.
- C) present value of an annuity.
- D) Both A and B can be used for this analysis.

Answer: A

Diff: 2

Question Status: Revised

11) As the time period until receipt of an amount of money increases, the present value of the amount at a fixed interest rate

- A) remains the same.
- B) increases.
- C) decreases.
- D) not enough information to make a decision.

Answer: C

Diff: 2

Question Status: Revised

12) How much must you invest today at 8% interest in order to see your investment grow to \$15,000 in 10 years?

- A) \$6,330
- B) \$6,945
- C) \$7,620
- D) \$7,500

Answer: B

Explanation: B) $PVIF = .463 \times \$15,000 = \$6,945$

Diff: 2

Question Status: Previous edition

Using the Time Value of Money charts provided, answer the following question(s).

(Note to Instructors: Provide the appropriate tables to students from Personal Finance, Sixth Edition, Appendix C: Financial Tables.)

13) If Joe has \$5,600 today and invests it at a 10% interest rate, how much will he have in 12 years? (Note—Solve as a future value problem.)

- A) \$17,393.60
- B) \$17,572.80
- C) \$15,770.49
- D) \$12,320.00

Answer: B

Explanation: B) Note—This problem can be solved using either the Future or the Present Value tables.

Solved as Future Value - $\$5,600 \times 3.138 = \$17,572.80$

Solved as Present Value - $\$5,600 / 3.19 = \$17,554.86$ (rounded)

Diff: 2

Question Status: Revised

14) If Jim wants \$25,000 in five years and can earn an 8% interest rate, how much does he need to invest today? (Note—Solve as a present value problem.)

- A) \$16,108
- B) \$17,025
- C) \$15,158
- D) \$17,829

Answer: B

Explanation: B) Note—This problem can be solved using either the Future or the Present Value tables.

Solved as Future Value - $\$25,000 / 1.469 = \$17,018.38$ (rounded)

Solved as Present Value - $\$25,000 \times 0.681 = \$17,025.00$

Diff: 2

Question Status: Revised

15) At what annual rate would \$500 grow to \$1,948 in 12 years? (Note—Solve as a present value problem.)

- A) 12.0 %
- B) 13.0 %
- C) 12.5 %
- D) 11.0 %

Answer: A

Explanation: A) Note—This problem can be solved using either the Future or the Present Value tables.

Solved as Future Value - $\$1,948 / 500 = 3.896$ (Exhibit 3.1)—look up on 12 year line

Solved as Present Value - $\$500 / \$1,948 = 0.257$ (Exhibit 3.2)—look up on 12 year line (12.0 percent)

Diff: 2

Question Status: Revised

Use the following two columns of items to answer the matching questions below:

- A) the process of obtaining present values
- B) a factor multiplied by a future value to get the present value of that amount

16) present value interest factor

Diff: 1

Question Status: Revised

17) discounting

Diff: 1

Question Status: Revised

Answers: 16) B 17) A

18) If Lucky Louie won a lottery and chose to take \$1,000,000 in cash (disregarding taxes), how much money would he have in 30 years if he invested at 6% per annum?

A) \$5,743,491

B) \$5,804,268

C) \$6,050,972

D) Not enough information is provided to solve the problem

Answer: A

Diff: 3

Question Status: New

19) Which of the following decisions is not financially sound?

A) Defer your student loan payments with no interest accruing

B) Defer your student loan payments if the interest rate is 7% per annum

C) Take a 60 month zero interest rate car loan

D) Prioritize paying off the highest interest rate loans versus lower rate loans

Answer: B

Diff: 2

Question Status: New

3.4 Future Value of an Annuity

1) The cash flows of an annuity due occur at the beginning of each period.

Answer: TRUE

Diff: 3

Question Status: Previous edition

2) An annuity due differs from an ordinary annuity in that the payments occur at the beginning of the period instead of at the end of the period.

Answer: TRUE

Diff: 2

Question Status: Previous edition

3) If the payment in an ordinary annuity changes over time, you cannot determine the future value of the payment stream.

Answer: FALSE

Diff: 2

Question Status: Previous edition

4) Which of the following decisions would involve the use of the future value of a \$1 ordinary annuity table?

A) Your brother buys your car and offers to pay you \$500 now or \$1,500 in two years.

B) You win a lawsuit and are offered a lump-sum payment today of \$100,000 or \$15,000 a year for 20 years.

C) Your father and mother wish to deposit enough money on the date of your high school graduation to enable you to take a \$7,000 cruise when you graduate from college in 4 years.

D) You want to have \$1,000,000 in order to retire at age 55, but need to know how much you will need to deposit each year from now until your 55th birthday.

Answer: D

Diff: 2

Question Status: Revised

5) Aaron wants to put \$200 per month into an individual retirement account at 15% for four years. What is he solving for using his financial calculator?

A) Present value

B) Future value

C) Interest rate

D) Payment

Answer: B

Diff: 2

Question Status: Revised

6) Lisa wants to know how much savings she would accumulate in 15 years if she saves \$2,000 per year and her savings earns 4% per year. She needs to determine the

A) present value of an annuity.

B) annuity amount.

C) future value of one specific dollar amount today.

D) future value of an annuity.

Answer: D

Diff: 2

Question Status: New

7) Jerry wants to know how much he needs to save every year to accumulate \$15,000 in five years at a 10% interest rate. Which of the following tables should he use?

- A) Present value of \$1
- B) Present value of an ordinary annuity
- C) Future value of \$1
- D) Future value of an ordinary annuity

Answer: D

Diff: 2

Question Status: Revised

8) Don wants to know how much he needs to save every year to amass \$15,000 in five years at a 5% interest rate. What is he calculating using his financial calculator?

- A) Present value
- B) Future value
- C) Interest rate
- D) Payment

Answer: D

Diff: 2

Question Status: Previous edition

9) The higher the rate used in determining the future value of an annuity,

- A) the smaller the future value at the end of the period.
- B) the greater the future value at the end of the period.
- C) the greater the present value at the beginning of the period.
- D) none of these—the interest rate has no effect on the future value of the annuity.

Answer: B

Diff: 2

Question Status: Revised

10) To save for her newborn son's college education, Kelli Peterson will invest \$1,500 at the end of each year for the next 18 years. The interest rate she expects to earn on her investment is 9%. How much money will she have saved by the time her son turns 18?

- A) \$55,461
- B) \$69,027
- C) \$61,952
- D) \$68,399

Answer: C

Explanation: C) $FVIFA = 41.301 \times \$1,500 = \$61,952$

Diff: 2

Question Status: Previous edition

- 11) The future value of an ordinary annuity assumes that the payments are received
- A) at the beginning of the year and the last payment does not compound.
 - B) at the end of the year and the last payment does not compound.
 - C) at the beginning of the year and the last payment is compounded.
 - D) at the end of the year and the last payment is compounded.

Answer: B

Diff: 2

Question Status: Revised

12) Using the Time Value of Money charts provided, answer the following question. (*Note to Instructors: Provide the appropriate tables to students from Personal Finance, Sixth Edition, Appendix C: Financial Tables.*)

Judy would like to have \$200,000 saved in her retirement account in 20 years. Assuming an interest rate of 10%, how much should she contribute each year?

- A) \$3,491.92
- B) \$2,000.00
- C) \$2,576.11
- D) \$4,376.77

Answer: A

Explanation: A) (Exhibit 3.3) $\$200,000/57.275 = \$3,491.92$ (rounded)

Diff: 2

Question Status: Revised

13) The difference between an ordinary annuity and an annuity due is that with an annuity due the payments occur at the _____ of each period.

Answer: beginning

Diff: 2

Question Status: Revised

14) You wish to retire in 30 years and determine that you will need \$1,000,000 to fund your retirement. If you can invest with a return of 8% you will need to invest _____ each year to reach your goal.

Answer: \$8,827 (rounded)

Diff: 2

Question Status: Previous edition

15) The _____ the interest rate, the _____ the present value of an annuity.

- A) higher; lower
- B) lower; lower
- C) higher; higher
- D) Interest rates do not affect the present value of an annuity.

Answer: A

Diff: 2

Question Status: New

16) You have set a \$100,000 goal for a college funds for your newborn child. You plan on having a fixed amount taken from your salary each month to meet this goal. The calculation to determine the monthly amount is called

- A) planning and budgeting.
- B) present value of an annuity.
- C) future value of an annuity.
- D) future value of a series of single payments.

Answer: C

Diff: 1

Question Status: New

3.5 Present Value of an Annuity

1) To determine how much money you would need to save to withdraw \$10,000 a year for five years, you would use the present value of an annuity tables.

Answer: TRUE

Diff: 3

Question Status: Previous edition

2) Time value concepts can be applied to lottery winnings. The winner can usually choose an annuity or a lump sum.

Answer: TRUE

Diff: 1

Question Status: Previous edition

3) It is always better to choose a lump sum rather than to choose periodic payments over time. This is why nearly all lottery winners choose the lump-sum payment.

Answer: FALSE

Diff: 2

Question Status: Revised

4) The present value of an annuity can be obtained by discounting the individual cash flows of the annuity and then summing the resulting present values.

Answer: TRUE

Diff: 2

Question Status: Previous edition

5) You utilize present and future value concepts in investment, purchase, and retirement decisions.

Answer: TRUE

Diff: 1

Question Status: Previous edition

6) The time value of money can be used to estimate future savings with periodic deposits of funds.

Answer: TRUE

Diff: 1

Question Status: Previous edition

7) Which of the following decisions would involve the use of the present value of a \$1 ordinary annuity table?

A) Your brother buys your car and offers to pay you \$500 now or \$1,500 in two years.

B) You win a lawsuit and are offered a lump-sum payment today of \$100,000 or \$15,000 a year for 20 years.

C) Your father and mother wish to deposit enough money on the date of your high school graduation to enable you to take a \$7,000 cruise when you graduate from college 4 years hence.

D) You want to have \$1,000,000 in order to retire at age 55, but need to know how much you will need to deposit each year from now until your 55th birthday.

Answer: B

Diff: 3

Question Status: Revised

8) To compute how much you would need to save each year for the next 25 years to allow you to withdraw \$20,000 for the following 30 years, you would need to use

A) the future value of an annuity.

B) the present value of an annuity.

C) both future and present value of an annuity.

D) both present and future value of \$1.

Answer: C

Diff: 3

Question Status: Revised

9) To determine how much you would need to save each year to reach a specific goal, you would use

A) present value of \$1.

B) future value of \$1.

C) present value of an annuity.

D) future value of an annuity.

Answer: D

Diff: 2

Question Status: Revised

10) Yogi Berra Jr. has agreed to play for the New York Mets for \$4 million per year for the next 10 years. What table would you use to calculate the value of this contract in today's dollars?

- A) Present value of a single amount
- B) Future value of an annuity
- C) Future value of a single amount
- D) Present value of an annuity

Answer: D

Diff: 2

Question Status: Previous edition

11) The state lottery has just informed you that you have won \$1 million to be paid out in the amount of \$50,000 per year for the next 20 years. With a discount rate of 12%, what is the present value of your winnings?

- A) \$221,950
- B) \$398,150
- C) \$373,450
- D) \$392,150

Answer: C

Explanation: C) $PVIFA\ 7.469 \times \$50,000 = \$373,450$

Diff: 2

Question Status: Previous edition

12) Using the Time Value of Money charts provided, answer the following question. (*Note to Instructors: Provide the appropriate tables to students from Personal Finance, Sixth Edition, Appendix C: Financial Tables.*)

Jack is 35 years old and is planning to retire at age 65. Based on a variety of factors, he is planning a retirement of 20 years. Jack determines that he will need \$20,000 per year during his 20 years of retirement. If he can invest at 9%, how much will he need to save each year beginning today to reach his goal?

- A) \$11,428.57
- B) \$6,086.00
- C) \$1,339.47
- D) \$20,000.00

Answer: C

Explanation: C) $\$20,000 \times 9.129$ (PV annuity 9 percent, 20 years) = \$182,580.00

Annual needed savings $\times 136.308$ (FV annuity 9 percent, 30 years) = \$182,580.00

Annual needed savings = \$1,339.47

Diff: 1

Question Status: Revised

13) Assuming that you had just won \$5,000,000 in the lottery, describe the advantages and disadvantages of receiving a lump sum today versus a ten-year annuity. Discuss other factors that are relevant or needed to make this decision. No interest rate is given, but different interest rates can be assumed if necessary to answer this problem.

Answer: A lump sum would incur a large tax liability. In contrast, an annuity may lower the overall tax liability and would provide yearly payments. This problem does not state an interest rate, so actual computations could be done at different interest rates. The rates could depend upon a your ability to invest and wisely use the money. In general, if you can invest the lump sum winnings at a higher interest rate than implied by the annuity, you should prefer the lump sum.

Diff: 2

Question Status: Revised

Use the following two columns of items to answer the matching questions below:

- A) a series of equal payments that occur at the beginning of each period
- B) diagrams that show payments over time
- C) a factor multiplied by a periodic savings level (annuity) to get the present value of the annuity

14) timelines

Diff: 1

Question Status: Revised

15) annuity due

Diff: 1

Question Status: Revised

16) present value interest factor for an annuity

Diff: 1

Question Status: Revised

Answers: 14) B 15) A 16) C

17) Lucky Louie just won the lottery!! He has a choice of taking \$1,000,000 in cash or receiving \$50,000 per year for 30 years beginning at the end of this year. The best way to make this choice is to

- A) consult a tax advisor.
- B) consult an oracle.
- C) calculate the future value of the annuity payments.
- D) calculate the present value of the annuity payments.

Answer: D

Diff: 2

Question Status: New

18) Assuming interest rates were 6% per annum, what would be the present value of the \$50,000 per year for 30 years payment stream? Use the tables or a financial calculator.

- A) \$688,242
- B) \$1,500,000
- C) \$700,002
- D) \$693,974

Answer: A

Diff: 3

Question Status: New

3.6 Using Time Value to Estimate Savings

1) Present and future values concepts are applied in all of the following decisions **except**

- A) purchase of a home.
- B) calculation of withdrawals needed during retirement.
- C) calculation of savings for a large purchase.
- D) annual cash inflows.

Answer: D

Diff: 1

Question Status: Revised

2) Present and future values concepts are **not** applied to which of the following?

- A) Payments on a home
- B) Calculation of withdrawals needed during retirement
- C) Calculation of savings for a large purchase
- D) The balance of your checking account today

Answer: D

Diff: 1

Question Status: Previous edition

3) The time value of money can be applied to all of the following **except**

- A) bond valuation.
- B) stock valuation.
- C) determining the current market value of your home.
- D) determining the amount of taxes owed on income this year.

Answer: D

Diff: 2

Question Status: Revised

Use the data in table 3.1 to answer the following question(s):

Future value of \$1	7%	Year 5	Factor 1.403
Present value of \$1	7%	Year 5	Factor 0.713
Future value of a \$1 ordinary annuity	7%	Year 5	Factor 5.751
Present value of a \$1 ordinary annuity	7%	Year 5	Factor 4.100

Table 3.1

4) Refer to Table 3.1 above. How much will you need to deposit today to enable you to withdraw \$1,000 each year for the next 5 years if the money is invested at 7%?

- A) \$1,403
- B) \$713
- C) \$5,751
- D) \$4,100

Answer: D

Explanation: D) $\$1,000 \times 4.100 = \$4,100$

Diff: 2

Question Status: Previous edition

5) Refer to Table 3.1 above. How much will you have if you deposit \$1,000 today in an account paying 7% and you leave it on deposit for 5 years?

- A) \$1,403
- B) \$713
- C) \$5,751
- D) \$4,100

Answer: A

Explanation: A) $\$1,000 \times 1.403 = \$1,403$

Diff: 2

Question Status: Previous edition

6) Refer to Table 3.1 above. How much will you have if you deposit \$1,000 each year for the next 5 years in an account paying 7%?

- A) \$1,403
- B) \$713
- C) \$5,751
- D) \$4,100

Answer: C

Explanation: C) $\$1,000 \times 5.751 = \$5,751$

Diff: 2

Question Status: Previous edition

7) Refer to Table 3.1 above. How much will you need to deposit today in an account paying 7% if you wish to have \$1,000 in 5 years?

- A) \$1,403
- B) \$713
- C) \$5,751
- D) \$4,100

Answer: B

Explanation: B) $\$1,000 \times .713 = \713

Diff: 2

Question Status: Previous edition

Using the Time Value of Money charts provided, answer the following question(s).

(Note to Instructors: Provide the appropriate tables to students from Personal Finance, Sixth Edition, Appendix C: Financial Tables.)

8) If Sandy has \$7,000 today and invests it for five years at a 5% interest rate, how much will she have in five years?

- A) \$8,750
- B) \$7,850
- C) \$8,932
- D) \$8,857

Answer: C

Explanation: C) $FVIF\ 1.276 \times \$7,000 = \$8,932$

Diff: 1

Question Status: Previous edition

9) If Art wants \$35,000 in 10 years and can earn a 12% interest rate, how much does he need to invest today?

- A) \$10,538
- B) \$10,310
- C) \$11,270
- D) \$14,375

Answer: C

Explanation: C) $PVIF .322 \times \$35,000 = \$11,270$

Diff: 2

Question Status: Previous edition

10) At what annual rate would \$200.00 grow to \$497.60 in five years?

- A) 19%
- B) 18%
- C) 20%
- D) 22%

Answer: C

Explanation: C) $\$497.60/\$200 = 2.488$; FVIF 2.488, $n = 5$, $i = 20\%$

Diff: 3

Question Status: Revised

11) How many years will it take for \$35 to grow to \$53.87 if it is invested at 9% compounded annually?

- A) 6.0
- B) 5.5
- C) 5.0
- D) 4.0

Answer: C

Explanation: C) $\$53.87/\$35 = 1.539$; FVIF 1.539, $i = 9\%$, $n = 5$

Diff: 3

Question Status: Revised

12) How many years will it take for \$500 to grow to \$1,039.50 if it is invested at 5% compounded annually?

- A) 15
- B) 14
- C) 13
- D) 12

Answer: A

Explanation: A) $\$1,039.50/\$500 = 2.079$; FVIF 2.079, $i = 5\%$, $n = 15$

Diff: 2

Question Status: Revised

13) Carol would like to have \$500,000 saved in her retirement account in 30 years. Assuming an interest rate of 10%, how much should she contribute each year?

- A) \$2,182.00
- B) \$2,000.00
- C) \$1,956.20
- D) \$3,039.70

Answer: D

Explanation: D) $\$500,000 / \text{FVIF } 164.49 = \$3,039.70$

Diff: 2

Question Status: Revised

14) John would like to save \$1,500,000 by the time he retires in 30 years and believes he can earn an annual return of 8%. How much does he need to invest each year to achieve his goal?

- A) \$13,242
- B) \$18,900
- C) \$20,518
- D) none of the above

Answer: A

Explanation: A) $\$1,500,000 / \text{FVIF } 113.28 = \$13,242$

Diff: 2

Question Status: Previous edition

15) Mr. Wolf is borrowing \$500,000 to expand his business. The loan will be for ten years at 12% interest and will be repaid in equal quarterly installments. What will the quarterly installments be?

- A) \$88,496
- B) \$21,631
- C) \$25,510
- D) \$60,650

Answer: B

Explanation: B) $\$500,000 / 23.115 (\text{PVIFA}, n = 40, i = 3\%) = \$21,631$ (rounded)

Diff: 2

Question Status: Previous edition

16) Describe how present and future values concepts apply to your income and expenses and ultimately your personal budget, income statement, and balance sheet.

Answer: This is basically a subjective answer. Present and future value concepts affect your investing, purchase, and retirement decisions. The results of these decisions will have a positive or negative impact on your personal financial statements.

Diff: 1

Question Status: Previous edition

17) Compare using the present value, future value, and annuity tables to using your financial calculator to solve problems. What are some of the advantages and disadvantages of each tool?

Answer: The tables require you to carefully look at the titles to ensure you have the correct table. Looking at the tables almost requires a ruler to pick the correct figure. The financial calculator requires practice to input the values. Depending upon the calculator, some values may require a negative input which may be confusing. There is a learning curve with both methods; however, the answers found for a problem using both tools should be fairly close.

Diff: 1

Question Status: Revised

18) After completing this chapter, do you feel comfortable using your financial calculator for decisions? List several large financial decisions and how you could apply your newly acquired knowledge to make the best choice.

Answer: There are a multitude of acceptable answers, such as calculating monthly mortgage payments or calculating the investment required annually to obtain a desired amount at retirement.

Diff: 1

Question Status: Previous edition

3.7 How Saving Fits Within Your Financial Plan

1) The future value of your savings and debt affect all of the following **except** which of the following?

- A) Financial planning tools
- B) Protecting your wealth
- C) Liquidity management
- D) Marketing management

Answer: D

Diff: 1

Question Status: Revised