Test Bank: Chapter 2

Introduction to Personal Finance: Beginning Your Financial Journey
By John Grable and Lance Palmer

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Bloom's Taxonomy Key:

K – Knowledge
C – Comprehension
Ap – Application
A – Analysis
S – Synthesis
E – Evaluation

1. Which of the following refers to the price paid for using money?
   a. Interest.
   b. Debt.
   c. Principal.
   d. Compound growth.

Ans: a, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

2. Which of the following refers to the amount of money borrowed?
   a. Interest.
   b. Debt.
   c. Principal.
   d. Compound growth.

Ans: c, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

3. Which of the following can affect the loan interest rate?
   a. Your salary.
   b. Purpose of the loan.
   c. Your prior financial behaviors.
   d. All of these answer choices are correct.

Ans: d, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

4. Which of the following refers to investment gains earned in the first time period that are put to work in the second time period to earn additional investment returns?
    a. Interest.
    b. Debt.
    c. Principal.
    d. Compound growth.

Ans: d, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

5. Which of the following is a rule that can help you grow your money?
    a. The longer you let your money grow, the more you will have in the future (assuming the same interest rate).
    b. The more interest you earn, the more you will accumulate over time.
    c. The higher the interest rate you want, the more risk you must take.
    d. All of these answer choices are correct.

Ans: d, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

6. The Federal Deposit Insurance Corporation and the National Credit Union Administration protect savings deposits up to what amount?
    a. $250,000.
    b. $350,000.
    c. $450,000.
    d. $500,000.

Ans: a, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

7. If risk is low, then the interest rate that your money earns is generally
    a. high.
    b. low.
    c. doubled.
    d. not affected.

Ans: b, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

8. What is the annual percentage rate (APR) if a bank pays 0.3% interest monthly on savings?
    a. 1.8%.
    b. 2.4%.
    c. 3.6%.
    d. 4.8%.

Ans: c, LO: 2.1, Section 2.1, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: APR = Periodic ~~i~~interest ~~R~~rate ~~×~~× Number of ~~P~~periods in the ~~Y~~year

Solution: 0.3% periodic interest rate ~~×~~× 12 periods in the year = 3.6% APR

9. What is the APR if a bank pays 0.25% interest monthly on savings?
    a. 2.4%.
    b. 3.0%
    c. 3.6%.
    d. 4.8%.

Ans: b, LO: 2.1, Section 2.1, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: APR = Periodic ~~i~~interest ~~R~~rate ~~×~~× Number of ~~P~~periods in the ~~Y~~year-

Solution: 25% periodic interest rate × 12 periods in the year -= 3% APR

10. What is the APR if a bank pays 0.4% interest monthly on savings?
    a. 1.8%.
    b. 2.4%.
    c. 3.6%.
    d. 4.8%.

Ans: d, LO: 2.1, Section 2.1, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: APR = Periodic ~~i~~interest ~~R~~rate ~~×~~× Number of ~~P~~periods in the ~~Y~~year-

Solution: 0.4% periodic interest rate × 12 periods in the year = 4.8% APR-

11. Which of the following provides an estimate of how long it will take you to double your money?
    a. Rule of 72.
    b. Compounding interest.
    c. APR.
    d. APY.

Ans: a, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

12. How long will it take for your money to double if the annual percentage yield (APY) is 6%?
    a. 12 years.
    b. 12 months.
    c. 10 years.
    d. 10 months.

Ans: a, LO: 2.1, Section 2.1, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72. $\frac{72}{\text{Interest rate}} = \text{Number of years}$

Solution: $\frac{72}{6} = 12 \text{ years}$

13. What should you compare when comparing loans?
    a. Principal.
    b. Interest rate.
    c. APR.
    d. APY.

Ans: c, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

14. What should you compare when comparing savings options?
    a. Principal.
    b. Interest rate.
    c. APR.
    d. APY.

Ans: d, LO: 2.1, Section 2.1, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

15. How long will it take for your money to double if the APY is 8%?
    a. 9 years.
    b. 9 months.
    c. 12 years.
    d. 12 months.

Ans: a, LO: 2.1, Section 2.1, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72. $\frac{72}{\text{Interest rate}} = \text{Number of years}$

Solution: $\frac{72}{8} = 9 \text{ years}$

16. What formulas and calculations are some of the most valuable external finance tools that allow you to consider financial goals in terms of money, time, and interest?
    a. APR.
    b. APY.
    c. Rule of 72.
    d. Time value of money (TVM).

Ans: d, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

17. Which of the following refers to a series of equal payments or deposits?
    a. Annuity.
    b. Future value.
    c. Number of periods.
    d. TVM.

Ans: a, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

18. Which of the following refers to the rate of return or discount rate used to determine future value (FV) or present value (PV)?
    a. Principal.
    b. Interest.
    c. Rule of 72.
    d. TVM.

Ans: b, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

19. Which of the following estimates how much current savings and investments will be worth at a certain date in the future?
    a. FV of a lump sum.
    b. PV of a lump sum.
    c. FV of an annuity.
    d. PV of an annuity.

Ans: a, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

20. Which of the following determines the current value of a future amount?
    a. FV of a lump sum.
    b. PV of a lump sum.
    c. FV of an annuity.
    d. PV of an annuity.

Ans: b, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

21. Which of the following determines the current value of a regular series of equal payments occurring in the future?
    a. FV of a lump sum.
    b. PV of a lump sum.
    c. FV of an annuity.
    d. PV of an annuity.

Ans: d, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

22. Which of the following estimates how much you will have in the future if you save or invest a set dollar amount on a regular basis?
    a. FV of a lump sum.
    b. PV of a lump sum.
    c. FV of an annuity.
    d. PV of an annuity.

Ans: c, LO: 2.2, Section 2.2, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

23. If you start with $2,000 today, approximately how much will you have in 2 years if you can earn 6% each year?
    a. $2,247.
    b. $2,547.
    c. $3,047.
    d. $3,247.

Ans: a, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $2,247–$2,247.20

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -2,000 \text{ (negative because cash-flow out)}$

$\text{N} = 2$

$\text{I} = 6$

$\text{CPT FV} = \$2,247.20$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV(1+i)^n$$

$$FV_n = \$2,000\,(1+0.06)^2$$

$$FV_n = \$2,000 \times 1.1236$$

$$FV_n = \$2,247.20$$

Excel Spreadsheet

$= \text{FV}(\text{rate, nper, pmt, pv})$

$= \text{FV}(0.06, 2, 0, -2,000)$

$\text{FV} = \$2,247.20$

24. If you start with $2,500 today, approximately how much will you have in 5 years if you can earn 4% each year?
    a. $2,241.
    b. $2,541.
    c. $3,041.
    d. $3,241.

Ans: c, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $3,041.62–$3,042

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -2,500 \text{ (negative because cash-flow out)}$

$\text{N} = 5$

$\text{I} = 4$

$\text{CPT FV} = \$3,041.63$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$FV_n = PV(1+i)^n$

$FV_n = \$2,500\,(1+0.04)^5$

$FV_n = \$2,500 \times 1.21665$

$FV_n = \$3,041.62$

Excel Spreadsheet

$= \text{FV}(\text{rate, nper, pmt, pv})$

$= \text{FV}(0.04, 5, 0, -2,500)$

$\text{FV} = \$3,041.63$

25. If you start with $4,000 today, approximately how much will you have in 8 years if you can earn 8% each year?
    a. $6,454.
    b. $7,404.
    c. $8,444.

d. $9,244.

Ans: b, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $7,403.72−$7,404

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -4,000 \text{ (negative because cash-flow out)}$

$\text{N} = 8$

$\text{I} = 8$

$\text{CPT FV} = \$7,403.72$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$FV_n = PV(1+i)^n$

$FV_n = \$4,000\ (1+0.08)^8$

$FV_n = \$4,000 \times 1.85093$

$FV_n = \$7,403.72$

Excel Spreadsheet

$= \text{FV(rate, nper, pmt, pv)}$

$= \text{FV}(0.08, 8, 0, -4,000)$

$\text{FV} = \$7,403.72$

26. Approximately, how many years would it take your money to grow from $4,000 to $8,000 if you could earn 4% interest?
    a. 12.
    b. 14.
    c. 16.
    d. 18.

Ans: d, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: How long it will take for the money to double: $\frac{72}{\text{Interest rate}} = \text{Years}$

Solution: $\frac{72}{4} = 18 \text{ years}$

27. Approximately, how many years would it take your money to grow from $5,000 to $10,000 if you could earn 6% interest?
    a. 12.
    b. 14.
    c. 16.
    d. 18.

Ans: a, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: How long it will take for the money to double: $\frac{72}{\text{Interest rate}} = \text{Years}$

Solution: $\frac{72}{6} = 12 \text{ years}$

28. Approximately what interest rate would you need to earn in order to turn $3,500 into $7,000 over 5 years?
    a. 12%.
    b. 15%.
    c. 16%.
    d. 18%.

Ans: b, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: $\frac{72}{\text{Years}} = \text{Interest rate}$

Solution: $\frac{72}{5} = 14.4\%$

29. Approximately, what interest rate would you need to earn in order to turn $2,500 into $5,000 over 6 years?
    a. 12%.
    b. 14%.
    c. 16%.
    d. 18%.

Ans: a, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: $\frac{72}{\text{Years}} = \text{Interest rate}$

Solution: $\frac{72}{6} = 12\%$

30. Approximately, what interest rate would you need to earn in order to turn $6,500 into $13,000 over 8 years?
    a. 9%.
    b. 10%.
    c. 11%.
    d. 12%.

Ans: a, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: $\frac{72}{\text{Years}} = \text{Interest rate}$

Solution: $\frac{72}{8} = 9\%$

31. A grandmother just put $12,000 into an investment earning 6% a year for her granddaughter's college education. Approximately, how much will be in the account in 10 years assuming that all the interest is left in the account?
    a. $19,200.
    b. $21,490.
    c. $16,250.
    d. $21,339.

Ans: b, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 1, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $21,490–$21,490.20

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -12,000$ (negative because cash-flow out)

$\text{N} = 10$

$\text{I} = 6$

$\text{CPT FV} = \$21,490.17$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV(1+i)^n$$
$$FV_n = \$12,000\,(1+0.06)^{10}$$
$$FV_n = \$12,000 \times 1.79085$$
$$FV_n = \$21,490.20$$

Excel Spreadsheet

$$= \text{FV(rate, nper, pmt, pv)}$$
$$= \text{FV}(0.06, 10, 0, -12,000)$$
$$\text{FV} = \$21,490.17$$

32. Emanuel invested $10,000 in a security that will double in value in 10 years. Approximately, what annual rate of return is this investment making?
    a. 10%.
    b. 7.2%.
    c. 6.3%.
    d. 6%.

Ans: b, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Formula: Rule of 72: $\dfrac{72}{\text{Years}} = \text{Interest rate}$

Solution: $\dfrac{72}{10} = 7.2\%$

33. Jorge has the opportunity to receive $12,000 now or $15,000 in 4 years. If Jorge can earn 6% on his investment, what is the approximate present value of the $15,000?
    a. $15,000.
    b. $13,785.
    c. $11,881.
    d. $12,000.

Ans: c, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the present value of a lump sum.

Solution Range: $11,881−$11,881.40

Financial Calculator Inputs (TI BAII Plus)

$\text{FV} = -15,000$ (negative because cash-flow out)

$\text{N} = 4$

$\text{I} = 6$

$\text{CPT PV} = \$11,881.40$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$PV_n = \frac{FV}{(1+i)^n}$$

$$PV_n = \frac{\$15,000}{(1+0.06)^4}$$

$$PV_n = \frac{\$15,000}{1.26248}$$

$$PV_n = \$11,881.38$$

Excel Spreadsheet

$= \text{PV(rate, nper, pmt, fv)}$

$= \text{PV}(0.06, 4, 0, -15000)$

$\text{PV} = \$11,881.40$

34. Jorge has the opportunity to receive $10,000 now or $12,000 in 4 years. If Jorge can earn 6% on his investment, what is the approximate present value of the $12,000?
    a. $10,000.
    b. $9,505.
    c. $11,881.
    d. $12,000.

Ans: b, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the present value of a lump sum.
Solution Range: $9,505−$9,505.12

Financial Calculator Inputs (TI BAII Plus)

$\text{FV} = -12,000$ (negative because cash-flow out)

$\text{N} = 4$

$\text{I} = 6$

$\text{CPT PV} = \$9,505.12$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$PV_n = \frac{FV}{(1+i)^n}$$

$$PV_n = \frac{\$12,000}{(1+0.06)^4}$$

$$PV_n = \frac{\$12,000}{1.26248}$$

$$PV_n = \$9,505.10$$

Excel Spreadsheet

$= \text{PV(rate, nper, pmt, fv)}$

$= \text{PV}(0.06, 4, 0, -12,000)$

$\text{PV} = \$9,505.12$

35. If Sean can earn 4%, approximately what will his $3,000 in savings be worth in 10 years?
    a. $3,600.
    b. $4,441.
    c. $5,640.
    d. $6,240.

Ans: b, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $4,440.72–$4,441

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -3,000$ (negative because cash-flow out)

$\text{N} = 10$

$\text{I} = 4$

$\text{CPT FV} = \$4,440.73$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV(1+i)^n$$
$$FV_n = \$3,000\ (1+0.04)^{10}$$
$$FV_n = \$3,000 \times 1.48024$$
$$FV_n = \$4,440.72$$

Excel Spreadsheet

$$= \text{FV}(\text{rate, nper, pmt, pv})$$
$$= \text{FV}(0.04, 10, 0, -3,000)$$
$$\text{FV} = \$4,440.73$$

36. If Mia can earn 6%, approximately what will her $5,000 in savings be worth in 15 years?
    a. $8,983.
    b. $9,983.
    c. $10,983.
    d. $11,983.

Ans: d, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of a lump sum.
Solution Range: $11,982.79–$11,983

Financial Calculator Inputs (TI BAII Plus)

$$\text{PV} = -5,000 \text{ (negative because cash-flow out)}$$
$$\text{N} = 15$$
$$\text{I} = 6$$
$$\text{CPT FV} = \$11,982.79$$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV(1+i)^n$$
$$FV_n = \$5,000\ (1+0.06)^{15}$$
$$FV_n = \$5,000 \times 2.39658$$
$$FV_n = \$11,982.90$$

Excel Spreadsheet

$$= \text{FV}(\text{rate, nper, pmt, pv})$$
$$= \text{FV}(0.06, 15, 0, -5,000)$$
$$\text{FV} = \$11,982.79$$

37. Approximately how much money do you need today to ensure that you will have $12,000 in 3 years, assuming you can earn 4% on your savings?
    a. $10,668.
    b. $11,224.
    c. $11,668.
    d. $12,668.

Ans: a, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the present value of a lump sum.
Solution Range: $10,667.96–$10,668

Financial Calculator Inputs (TI BAII Plus)

$\text{FV} = -12,000 \text{ (negative because cash-flow out)}$

$\text{N} = 3$

$\text{I} = 4$

$\text{CPT PV} = \$10,667.96$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$PV_n = \frac{\text{F}V}{(1+i)^n}$$

$$PV_n = \frac{\$12,000}{(1+0.04)^3}$$

$$PV_n = \frac{\$12,000}{1.12486}$$

$$PV_n = \$10,667.99$$

Excel Spreadsheet

$= \text{PV(rate, nper, pmt, fv)}$

$= \text{PV}(0.04, 3, 0, -12,000)$

$\text{PV} = \$10,667.96$

38. How much money do you need today to ensure that you will have $16,000 in 4 years, assuming you can earn 6% on your savings?
    a. $10,674.

b. $11,274.
c. $11,674.
d. $12,674.

Ans: d, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the present value of a lump sum.
Solution Range: $12,673–$12,673.47

Financial Calculator Inputs (TI BAII Plus)

$\text{FV} = -16,000 \text{ (negative because cash-flow out)}$

$\text{N} = 4$

$\text{I} = 6$

$\text{CPT PV} = \$12,673.50$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$PV_n = \frac{FV}{(1+i)^n}$$

$$PV_n = \frac{\$16,000}{(1+0.06)^4}$$

$$PV_n = \frac{\$16,000}{1.26248}$$

$$PV_n = \$12,673.47$$

Excel Spreadsheet

$= \text{PV(rate, nper, pmt, fv)}$

$= \text{PV}(0.06, 4, 0, -16,000)$

$\text{PV} = \$12,673.50$

39. Approximately how much money will you accumulate in your retirement account if you save $5,000 per year for 15 years and earn 6% on your investments?
    a. $101,668.
    b. $111,224.
    c. $116,380.
    d. $121,668.

Ans: c, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of an annuity.
Solution Range: $116,379.85−$116,380

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = 0$

$\text{N} = 15$

$\text{I} = 6$

$\text{PMT} = -5,000 \text{ (negative because cash-flow out)}$

$\text{CPT FV} = \$116,379.85$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of Annuity Factor Table (Ordinary Annuity)

$\text{Future value of a \$1 annuity (period} = 15 @ 6\%) = 23.27597$

$\text{FVA} = \text{Payment} \times \text{FVA factor of \$1}$

$\text{FVA} = \$5,000 \times 23.27597 = \$116,379.85$

Future Value of a Lump Sum Formula

$$FVA_n = \frac{PMT}{i}[(1+i)^n - 1]$$

$$FVA_n = \frac{\$5,000}{0.06}[(1+0.06)^{15} - 1]$$

$$FVA_n = \$83,333.33333\left(2.39656 - 1\right)$$

$$FVA_n = \$83,333.33333 \times 1.39656$$

$$FVA_n = \$116,380$$

Excel Spreadsheet

$= \text{FV(rate, nper, pmt, pv)}$

$= \text{FV}(0.06, 15, -5000, 0)$

$\text{FV} = \$116,379.85$

40. Approximately how much money will you accumulate in your retirement account if you save $2,500 per year for 40 years and earn 5% on your investments?
    a. $201,668.
    b. $254.889.
    c. $289,464.
    d. $301,999.

Ans: d, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of an annuity.

Solution Range: $301,999–$301,999.44

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = 0$

$\text{N} = 40$

$\text{I} = 5$

$\text{PMT} = -2,500 \text{ (negative because cash-flow out)}$

$\text{CPT FV} = \$301,999.44$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of Annuity Factor Table (Ordinary Annuity)

$\text{Future value of a \$1 annuity (period} = 40 @ 5\%) = 120.7998$

$\text{FVA} = \text{Payment} \times \text{FVA factor of \$1}$

$\text{FVA} = \$2,500 \times 120.7998 = \$301,999.50$

Future Value of a Lump Sum Formula

$$FVA_n = \frac{PMT}{i}[(1+i)^n - 1]$$

$$FVA_n = \frac{2,500}{0.05}[(1+0.05)^{40} - 1]$$

$$FVA_n = \$50,000\left(7.03999 - 1\right)$$

$$FVA_n = \$50,000 \times 6.03999$$

$$FVA_n = \$301,999.50$$

Excel Spreadsheet

$= \text{FV(rate, nper, pmt, pv)}$

$= \text{FV}(0.05, 40, -2,500, 0)$

$\text{FV} = \$301,999.44$

41. Approximately how much money will you accumulate in your retirement account if you save $1,000 per year for 30 years and earn 6% on your investments?
    a. $72,468.
    b. $79,058.
    c. $86,380.
    d. $91,668.

Ans: b, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the future value of an annuity.

Solution Range: $79,058–$79,058.19

Financial Calculator Inputs (TI BAII Plus)

$$PV = 0$$
$$N = 30$$
$$I = 6$$
$$PMT = -1{,}000 (\text{negative because cash-flow out})$$
$$CPT\ FV = \$79{,}058.19$$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of Annuity Factor Table (Ordinary Annuity)

$$\text{Future value of a } \$1 \text{ annuity (period} = 30 @ 6\%) = 79.05819$$
$$\text{FVA} = \text{Payment} \times \text{FVA factor of } \$1$$
$$\text{FVA} = \$1{,}000 \times 79.05819 = \$79{,}058.19$$

Future Value of a Lump Sum Formula

$$FVA_n = \frac{PMT}{i}[(1+i)^n - 1]$$
$$FVA_n = \frac{\$1{,}000}{0.06}[(1+0.06)^{30} - 1]$$
$$FVA_n = \$16{,}666.6667\left(5.74349 - 1\right)$$
$$FVA_n = \$16{,}666.667 \times 4.74349$$
$$FVA_n = \$79{,}058.17$$

Excel Spreadsheet

$$= \text{FV(rate, nper, pmt, pv)}$$
$$= \text{FV}(0.06, 30, -1{,}000, 0)$$
$$\text{FV} = \$79{,}058.19$$

42. Which of the following can you use to solve TVM problems?
    a. Microsoft Excel.
    b. A financial calculator.
    c. An app designed to solve these types of problems.
    d. All of these answer choices are correct.

Ans: d, LO: 2.3, Section 2.3, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

43. Max has the opportunity to receive $15,000 now or $20,000 in 5 years. If Max can earn 6% on his investment, what is the approximate present value of the $20,000?
    a. $15,000.

b. $20,000.
c. $11,881.
d. $14,945.

Ans: d, LO: 2.3, Section 2.3, Bloom: A, Difficulty: Medium, Min: 2, AACSB: none, AICPA FC: none, IMA: none

Solution: Calculate the present value of a lump sum.
Solution Range: $14,945−$14,945.23

Financial Calculator Inputs (TI BAII Plus)

$\text{FV} = -20,000 \text{ (negative because cash-flow out)}$

$\text{N} = 5$

$\text{I} = 6$

$\text{PMT} = 0$

$\text{CPT PV} = \$14,945.16$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$PV_n = \frac{FV}{(1+i)^n}$$

$$PV_n = \frac{\$20,000}{(1+0.06)^5}$$

$$PV_n = \frac{\$20,000}{1.33822}$$

$$PV_n = \$14,945.23$$

Excel Spreadsheet

$= \text{PV(rate, nper, pmt, fv)}$

$= \text{PV}(0.06, 5, 0, -20,000)$

$\text{PV} = \$14,945.16$

44. Which of the following refers to a payment of the same amount for a set number of months or years, such as in a car loan or mortgage?
    a. Amortized payment.
    b. Compound interest.
    c. Annuity.
    d. Interest.

Ans: a, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

45. Which of the following refers to saving money on a regular basis?

a. Amortized payment.
b. Compound interest.
c. Annuity.
d. Interest.

Ans: c, LO: 2.2, Section 2.2, Bloom: A, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

46. Which of the following refers to what you own?
    a. Assets.
    b. Liabilities.
    c. Net worth.
    d. Principal.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

47. Which of the following refers to what you owe?
    a. Assets.
    b. Liabilities.
    c. Net worth.
    d. Principal.

Ans: b, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

48. Which of the following refers to your assets minus your liabilities?
    a. Assets.
    b. Liabilities.
    c. Net worth.
    d. Principal.

Ans: c, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

49. Which of the following is on the left side of the balance sheet?
    a. Assets.
    b. Liabilities.
    c. Net worth.
    d. Principal.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

50. Which of the following is on the right side of the balance sheet?
    a. Assets.
    b. Liabilities only.
    c. Net worth only.
    d. Liabilities and net worth.

Ans: d, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

51. What happens to your net worth if you sell your car for more than you owe?
    a. Increase.
    b. Decrease.
    c. No change.
    d. Cannot determine with the given information.

Ans: d, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Medium, Min: 1, AACSB: none, AICPA FC: none, IMA: none

Solution: Net worth is assets minus liabilities. We do not know how much the car is worth, so we cannot determine the effect on net worth.

52. Which of the following refers to how quickly an asset can be converted to cash?
    a. Liability.
    b. Liquidity.
    c. Fair market value.
    d. Monetary asset.

Ans: b, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

53. Which of the following is an asset that would appreciate in value over time?
    a. Car.
    b. Computer.
    c. House.
    d. Bicycle.

Ans: c, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

54. Which of the following refers to an asset that increases in fair market value over time?
    a. Depreciating asset.
    b. Liquidity.
    c. Liability.
    d. Appreciating asset.

Ans: d, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

55. Which of the following refers to an asset that decreases in value over time?
    a. Depreciating asset.
    b. Liquidity.
    c. Liability.
    d. Appreciating asset.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

56. Which of the following is an asset that would depreciate in value over time?
    a. Car.
    b. Computer.
    c. Bicycle.
    d. All of these answer choices are correct.

Ans: d, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

57. Which of the following is an example of a short-term debt?
    a. Utility bill.
    b. Car loan.
    c. Student loan.
    d. Mortgage.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

58. Which of the following refers to a debt that is paid off within a year?
    a. Short-term debt.
    b. Long-term debt.
    c. Liabilities.
    d. Assets.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

59. Which of the following refers to the difference between the value of an asset and any liability (debt) associated with that asset?
    a. Equity.
    b. Liquidity.
    c. Appreciating asset.
    d. Depreciating asset.

Ans: a, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

60. Which of the following refers to borrowing money to buy something that either depreciates quickly in value or is consumed immediately?
    a. Good debt.
    b. Bad debt.
    c. Asset.
    d. Liability.

Ans: b, LO: 2.4, Section 2.4, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

61. Which of the following does a budget include?
    a. Assets.
    b. Income only.
    c. Expenses only.
    d. Income and expenses.

Ans: d, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

62. Which of the following is the first step of resource management?
    a. Track where your resources come from.
    b. Track where your resources are being used.
    c. Set and know your financial goals.
    d. Develop your own guidelines regarding the use of your resources.

Ans: c, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

63. In managing your household financial resources, what should you know in order to determine how much you're really earning and spending?
    a. Where your money for day-to-day expenses is coming from and where it is going.
    b. Where your longer-term goal implementation is coming from and where it is going.
    c. Your cash flows, by systematically tracking your income and expenses.
    d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: C, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

64. After tracking where your resources come from and how they are used, what tool can be used to help you manage your financial resources?
    a. A budget.
    b. A cash flow statement.
    c. An income & expense statement.
    d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: C, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

65. When setting your goals, which factors should you consider in order to make a meaningful decision?
    a. Your personal attitudes.
    b. Your personal perceptions.
    c. Your personal preferences.
    d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: C, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

66. Which of the following can be used for tracking?
    a. Computer spreadsheet.

b. Pen and paper.
c. Smartphone app.
d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

67. Which of the following refers to a financial tool that helps you regulate how quickly, and in what ways, your money is being used so that you can stay focused on accomplishing your goals?
    a. Budget.
    b. Balance sheet.
    c. Spreadsheet.
    d. Net worth.

Ans: a, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

68. Which of the following is an element in a budget?
    a. Income.
    b. Fixed expenses.
    c. Variable expenses.
    d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

69. Which of the following refers to how much you think you will receive or spend in each category?
    a. Fair market value.
    b. Projection.
    c. Liquidity.
    d. Budget.

Ans: b, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

70. Which of the following includes all resources that can be saved or spent?
    a. Expense.
    b. Income.
    c. Variable asset.
    d. Liability.

Ans: b, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

71. Which of the following means that you have planned well and have your money working for you?
    a. Surplus.
    b. Deficit.
    c. Net worth.

d. Asset.

Ans: a, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

72. Which of the following means that your expenses exceed your income?
    a. Surplus.
    b. Deficit.
    c. Net worth.
    d. Asset.

Ans: b, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

73. Which ratio indicates the percentage of money that you are setting aside on a regular basis?
    a. Consumer debt-to-income ratio.
    b. Total debt-to-income ratio.
    c. Savings ratio.
    d. Emergency fund ratio.

Ans: c, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

74. Which ratio indicates what percentage of your income that you are using to pay all of your debts?
    a. Consumer debt-to-income ratio.
    b. Total debt-to-income ratio.
    c. Savings ratio.
    d. Emergency fund ratio.

Ans: b, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

75. Which ratio indicates whether you have sufficient resources in case of an emergency?
    a. Consumer debt-to-income ratio.
    b. Total debt-to-income ratio.
    c. Savings ratio.
    d. Emergency fund ratio.

Ans: d, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

76. Which of the following is an element of a financial plan?
    a. Financial knowledge.
    b. Financial experience.
    c. Risk tolerance.
    d. All of these answer choices are correct.

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

77. Which of the following is the first step in creating a financial plan?
    a. What is your starting point?
    b. What is your financial score?
    c. What is your goal?
    d. What is your financial capacity?

Ans: c, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

78. Which of the following is the third step in creating a financial plan?
    a. What is your starting point?
    b. What is your financial score?
    c. What is your goal?
    d. What is your financial capacity?

Ans: b, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

79. Which of the following will provide you with a realistic understanding of your current risk tolerance, financial knowledge, and feelings of control?
    a. Credit score.
    b. Net worth.
    c. Surplus.
    d. Financial score.

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

80. Which of the following refers to the ability to keep moving forward toward goal achievement even if you face a few financial challenges or emergencies along the way?
    a. Financial literacy.
    b. Financial capacity.
    c. Financial score.
    d. Financial ability.

Ans: b, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

81. Which of the following is fluid over time?
    a. Financial knowledge.
    b. Financial capacity.
    c. Time horizon.
    d. Feelings of control and time horizon.

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

82. Which of the following is the final step in creating a financial plan?
    a. What is your starting point?

b. What is your financial score?
c. What is your goal?
d. Formalize and implement your financial plan.

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

83. Which of the following is the fourth step in creating a financial plan?
    a. What is your starting point?
    b. What is your financial score?
    c. What is your goal?
    d. What is your financial capacity?

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

84. Which of the following is the fifth step in creating a financial plan?
    a. What is your starting point?
    b. How realistic is your time horizon?
    c. What is your goal?
    d. What is your financial capacity?

Ans: b, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

85. Which of the following refers to having a financial score less than 10?
    a. Excellent job of managing financial behaviors.
    b. Good job of managing financial behaviors.
    c. Acceptable job of managing financial behaviors.
    d. Some difficulty in managing financial behaviors.

Ans: d, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

86. Which of the following refers to having a financial score of 11–15?
    a. Excellent job of managing financial behaviors.
    b. Good job of managing financial behaviors.
    c. Acceptable job of managing financial behaviors.
    d. Some difficulty in managing financial behaviors.

Ans: c, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

87. Which of the following refers to having a financial score of 16–20?
    a. Excellent job of managing financial behaviors.
    b. Good job of managing financial behaviors.
    c. Acceptable job of managing financial behaviors.
    d. Some difficulty in managing financial behaviors.

Ans: b, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

88. Which of the following refers to having a financial score greater than 20?
    a. Excellent job of managing financial behaviors.
    b. Good job of managing financial behaviors.
    c. Acceptable job of managing financial behaviors.
    d. Some difficulty in managing financial behaviors.

Ans: a, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

89. Your financial document is a(n) _____ document.
    a. rigid
    b. flexible
    c. simple
    d. unrealistic

Ans: b, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

90. Which of the following is the second step in creating a financial plan?
    a. What is your starting point?
    b. How realistic is your time horizon?
    c. What is your goal?
    d. What is your financial capacity?

Ans: a, LO: 2.6, Section 2.6, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

91. What are the total current assets?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

    a. $16,000.
    b. $21,500.

c. $31,000.
d. $55,000.

Ans: a, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Solution: eCurrent assets = eChecking account [3,000] + savings account [13,000] = 16,000

92. What are the total assets?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. $400,000.
b. $415,000.
c. $464,000.
d. $479,000.

Ans: d, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Solution: Total assets = checking account [3,000] + savings account [13,000] + car [25,000] + home [320,000] + household items [15,000] + retirement account [64,000] + other assets [39,000] = $479,000

93. What are the total current liabilities?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. $500.
b. $5,500.
c. $6,000.
d. $24,000.

Ans: c, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Solution: Current liabilities are short-term debts, meaning they are due within a year.

eCurrent liabilities = utility bill [500] + credit card account [5,500] = 6,000-

94. What are the long-term liabilities?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000

Retirement account	$64,000
Other assets	$39,000

a. $228,000.
b. $235,000.
c. $253,000.
d. $258,500.

Ans: c, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Solution: ~~I~~Long-term liabilities = car loan [18,000] + student loan [25,000] + mortgage [210,000] = **253,000**

95. What are the total liabilities?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. $253,000.
b. $258,500.
c. $259,000.
d. $274,000.

Ans: c, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Solution:
Total Liabilities = utility bill [500] + credit card account [5,500] + car loan [18,000] + student loan [25,000] + mortgage [210,000] = $259,000

96. What is the net worth?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. $141,500.
b. $162,000.
c. $190,000.
d. $220,000.

Ans: d, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Formula: ~~n~~Net worth = ~~t~~Total assets -– ~~t~~Total liabilities
Solution: Total assets = checking account [3,000] + savings account [13,000] + car [25,000] + home [320,000] + household items [15,000] + retirement account [64,000] + other assets [39,000] = $479,000
Total Liabilities = utility bill [500] + credit card account [5,500] + car loan [18,000] + student loan [25,000] + mortgage [210,000] = $259,000

Net Worth = total assets [479,000] – total liabilities [259,000] = $220,000

97. What is the debt ratio?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. 54.1%.
b. 59.1%.
c. 61.0%.
d. 64.6%.

Ans: a, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula: $$\text{Debt ratio} = \frac{\text{Total liabilities}}{\text{Total assets}}$$

Solution:

Total Liabilities = utility bill [500] + credit card account [5,500] + car loan [18,000] + student loan [25,000] + mortgage [210,000] = $259,000

Total assets = checking account [3,000] + savings account [13,000] + car [25,000] + home [320,000] + household items [15,000] + retirement account [64,000] + other assets [39,000] = $479,000

$$\text{Debt ratio} = \frac{\text{total liabilities}\,[259,000]}{\text{total assets}\,[479,000]} = 0.541 \sim \mathbf{54.1}\%$$

98. What is the current ratio?

Family's Assets and Liabilities	
Checking account	$3,000
Savings account	$13,000
Credit card account	$5,500
Utility bill	$500
Home	$320,000
Mortgage (30 years)	$210,000
Car	$25,000
Car loan (60 months)	$18,000
Student loan (7 years)	$25,000
Household items	$15,000
Retirement account	$64,000
Other assets	$39,000

a. 1.68.
b. 2.29.
c. 2.67.
d. 3.91.

Ans: c, LO: 2.4, Section 2.4, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula: $$\text{Current ratio} = \frac{\text{Current assets}}{\text{Current liabilities}}$$

Solution: **Current ~~A~~assets = ~~C~~checking ~~A~~account [3,000] + ~~S~~savings ~~A~~account [13,000] = 16,000**
Current ~~L~~liabilities = ~~U~~utility ~~B~~bill [500] + ~~C~~credit ~~C~~card ~~A~~account [5,500] = $6,000

$$\text{Current ratio} = \frac{\text{current assets}\,[16,000]}{\text{current liabilities}\,[6,000]} = \mathbf{2.67}$$

99. What is the total income?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300

Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. $115,000.
b. $117,150.
c. $127,000.
d. $129,150.

Ans: b, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Solution: **Total ~~I~~income = ~~E~~employment wages [115,000] + ~~I~~interest earned [950] + dividends earned [1,200] = 117,150**

100. What are the total fixed expenses?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. $81,950.

b. $85,550.
c. $93,950.
d. $97,550.

Ans: d, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Solution:
Total fixed expenses = mortgage [38,600] + auto loan [3,300] + student loan payments [9,000] + taxes [31,050] + utilities [3,600] + personal savings [12,000] = $97,550

101. What are the total variable expenses?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. $19,700.
b. $23,300.
c. $31,700.
d. $35,300.

Ans: a, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Solution:
Total variable expenses = gas [3,500] + groceries [7,200] + entertainment [6,000] + charitable donations [500] + clothing [1,500] + travel [1,000] = $19,700

102. What are the total expenses?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. $105,250.
b. $106,200.
c. $108,250.
d. $117,250.

Ans: d, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none
Solution:
Total expenses = mortgage [38,000] + auto loan [3,300] + student loan payments [9,000] + taxes [31,050] + utilities [3,600] + personal savings [12,000] + gas [3,500] + groceries [7,200] + entertainment [6,000] + charitable donations [500] + clothing [1,500] + travel [1,000] = $117,250

103. What is the surplus or deficit?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. −$2,000.
b. −$100.
c. $22,000.
d. $23,900.

Ans: b, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula: $\frac{\text{Surplus}}{\text{Deficit}} = \text{Total income} - \text{Total expenses}$

Solution:

Total income = employment wages [115,000] + interest earned [950] + dividends earned [1,200] = $117,150

Total expenses = mortgage [38,000] + auto loan [3,300] + student loan payments [9,000] + taxes [31,050] + utilities [3,600] + personal savings [12,000] + gas [3,500] + groceries [7,200] + entertainment [6,000] + charitable donations [500] + clothing [1,500] + travel [1,000] = $117,250

$$\frac{\text{Surplus}}{\text{Deficit}} = \text{total income}\,[117{,}150] - \text{total expenses}\,[117{,}250] = -\$100 \sim \text{Deficit of } \mathbf{\$100}$$

If positive, it is a surplus. If negative, it is a deficit.

104. What is the savings ratio?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. 10.24%.
b. 10.33%.
c. 10.35%.
d. 10.43%.

Ans: a, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula:

$$\text{Savings ratio} = \frac{[\text{Household (or personal) savings} + \text{Employer contributions to retirement plan}]}{\text{Total (or gross) income}}$$

Solution: Personal savings [12,000]

Total ~~I~~income = ~~E~~employment wages [115,000] + ~~I~~interest earned [950] + dividends earned [1,200] = 117,150

$$\text{Savings ratio} = \frac{\text{personal savings}\,[12,000]}{\text{total income}\,[117,150]} = 0.1024 \sim \mathbf{10.24\%}$$

105. What is the debt-to-income ratio?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. 39.41%.
b. 43.45%.
c. 46.52%.
d. 53,69%.

Ans: b, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula: $$\text{Debt-to-income ratio} = \frac{\text{Total debt payments}}{\text{Total (or gross) income}}$$

Solution: **Total debt payments = ~~M~~mortgage [38,600] ~~,~~+ auto loan [3,300]~~,~~ + ~~and~~ student loan payments [9,000] = $50,900**

Total ~~Income~~ (or ~~G~~gross ~~Income~~) income = ~~E~~employment wages [115,000] + ~~I~~interest earned [950] + dividends earned [1,200] = $117,150

$$\text{Debt-to-income ratio} = \frac{\text{total debt payments}\,[50,900]}{\text{total income}\,[117,150]} = 0.4345 \sim \mathbf{43.45\%}$$

106. What is the consumer debt-to-income ratio?

ITEM DESCRIPTION	
Employment wages	$115,000
Interest earned	$950
Dividends earned	$1,200
Mortgage payments	$38,600
Auto loan payments	$3,300
Student loan payments	$9,000
Taxes	$31,050
Utilities	$3,600
Personal savings	$12,000
Gas	$3,500
Groceries	$7,200
Entertainment	$6,000
Charitable donations	$500
Clothing	$1,500
Travel	$1,000

a. 10.50%.
b. 10.70%.
c. 39.41%.
d. 43.45%.

Ans: a, LO: 2.5, Section 2.5, Bloom: A, Difficulty: Medium, Min: 3, AACSB: none, AICPA FC: none, IMA: none

Formula: $$\text{Consumer debt-to-income ratio} = \frac{\text{Consumer debt payments}}{\text{Total (or gross) income}}$$

Solution: **Consumer ~~D~~debt ~~P~~payments = auto loan [3,300]~~, and~~+ student loan payments [9,000] = 12,300**

Total ~~I~~income = ~~E~~employment wages [115,000] + ~~I~~interest earned [950] + dividends earned [1,200] = 117,150

$$\text{Consumer debt-to-income ratio} = \frac{\text{consumer debt payments}\,[12,300]}{\text{total income}\,[117,150]} = 0.1050 \sim \mathbf{10.50\%}$$

107. Jack and Jill are proud new parents. They met while students at Ivy University and already have visions of their new child attending their alma mater in 18 years. Total tuition, room, and board is about $70,000 today, where it was only $27,000 when they graduated 15 years ago. They can expect to receive a long-term average annual return of 8% in their investment portfolio. Approximately how much would they have to save monthly starting now to have the tuition, room, and board (4-year degree) for their new child by freshman year?
    a. $1,513.
    b. $1,830.
    c. $2,330.
    d. $2,539.

Ans: b, LO: 2.3, Section 2.3, Bloom: S, Difficulty: Difficult, Min: 10, AACSB: none, AICPA FC: none, IMA: none

Solution:

Step 1: Calculate the rate of price growth (i).

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -27,000 \text{ (negative because cash-flow out)}$

$\text{FV} = 70,000$

$\text{N} = 15$

$\text{CPT I} = 6.56\%$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV\ (1+i)^n$$

$$\$70,000 = \$27,000\ (1+i)^{15}$$

$$\frac{\$70,000}{\$27,000} = (1+i)^{15}$$

$$2.59259 = (1+i)^{15}$$

$$1.06557 = 1+i$$

$$I = 0.06557 \text{ or } 6.56\%$$

Excel Spreadsheet

$$= \text{RATE(nper, pmt, } -\text{pv, fv)}$$

$$= \text{RATE}(15, 0, -27,000, 70,000)$$

$$\text{RATE} = 6.56\%$$

Step 2: Calculate the future value of a lump sum.

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = -280,000$ (negative because cash-flow out) – each year of college costs $\$70,000$ and $\$70,000 \times 4 = \$280,000$

$\text{N} = 18$ (years until the child starts college)

$\text{I} = 6.56$

$\text{CPT FV} = \$878,726.74$

Note: Entry requirements may vary slightly for other financial calculators.

Future Value of a Lump Sum Formula

$$FV_n = PV(1+i)^n$$

$$FV_n = \$280,000(1+0.656)^{18}$$

$$FV_n = \$280,000 \times 3.13831$$

$$FV_n = \$878,726.80$$

Excel Spreadsheet

$$= \text{FV}(\text{rate, nper, pmt, } -\text{pv})$$

$$= \text{FV}(0.0656, 15, 0, -280,000)$$

$$\text{FV} = \$878,292.48$$

Step 3: Calculate the future value of an annuity payment.

Financial Calculator Inputs (TI BAII Plus)

$\text{PV} = 0$

$\text{N} = 216$ (18 years $\times$ 12 months)

$$\text{I} = 0.667\left(\frac{8\%\text{ average annual return}}{12\text{ months}}\right)$$

$\text{FV} = -878,726.74$ (negative because cash-flow out)

$\text{CPT PMT} = \$1,829.55$

Note: Entry requirements may vary slightly for other financial calculators.

The Future Value of an Annuity

$$\text{FVA} = \frac{\text{PMT}}{I}[(1+I)^N - 1]$$

$$\$878,726.74 = \frac{\text{PMT}}{0.00667}[(1+0.00667)^{216} - 1]$$

$$\$878,726.74 = \frac{\text{PMT}}{0.00667}[4.20358 - 1]$$

$$\$878,726.74 = \frac{\text{PMT}}{0.00667} \times 3.20358$$

$$\$878,726.74 \times 0.00667 = 3.20358\ \text{PMT}$$

$$\$5,861.11 = 3.20358\ \text{PMT}$$

$$\text{PMT} = \frac{5,861.11}{3.20358} = \mathbf{\$1,829.55 \sim \$1,830\ monthly\ payments}$$

Excel Spreadsheet

$$= \text{PMT}(\text{rate}, \text{nper}, \text{PV}, -\text{FV})$$
$$= \text{PMT}(0.00667, 216, 0, -878272.48)$$
$$\text{PMT} = \$1,829.45$$

108. Bill is looking to purchase a $30,000 new car with 2% APR financing over 5 years. If he were to pay 20% out of pocket and finance the balance in equal monthly payments, what would be his approximate total cost of financing?
    a. $1,240.
    b. $1,447.
    c. $3,233.
    d. $3,772.

Ans: a, LO: 2.3, Section 2.3, Bloom: S, Difficulty: Difficult, Min: 10, AACSB: none, AICPA FC: none, IMA: none
Solution: The amount financed or initial principal is 80% of the car price [24,000]. The monthly periodic interest rate is the APR divided by 12 months [0.16667%]. The total number of payments is 5 years multiplied by 12 months [60].

Financial Calculator Inputs (TI BAII Plus)
PV = -24,000 (negative because cash-flow out)
FV= 0
I = 0.16667
N = 60
CPT PMT = 420.67

Note: Entry requirements may vary slightly for other financial calculators.

Payments Formula

$$\text{PMT} = \text{PV}\left[\frac{(I*(1+I)^N)}{(1+I)^N - 1}\right]$$

$$\text{PMT} = 24{,}000\left[\frac{(0.001667 \times 1.10510)}{(1.10510 - 1)}\right]$$

$$\text{PMT} = 24{,}000\left[\frac{0.00184}{0.10510}\right]$$

$$\text{PMT} = 24{,}000 \times 0.01751 = \$420.24$$

Excel Spreadsheet
=PMT(rate, nper, -pv, fv)
=PMT(0.0016667,60,-24000,0)
PMT = 420.67

60 monthly payments of $420.67 = \$25{,}240.20$
Total amount borrowed = \$24,000
Total payments [25,240] less total borrowed [24,000] = **total finance cost = \$1,240**

109. Which of the following is true about tracking your expenses?

a. Many spending habits are so routine that their cumulative impact is not fully recognized.
b. Tracking your expenses helps expose spending patterns and their impact.
c. Once you're fully aware of expenses, you can make changes that will save you money over time.
d. All of these answer choices are correct.

Ans: d, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

110. More trips to the store will typically result in _____ money spent.

a. less

b. more

c. no difference

d. There is not enough information to determine the answer.

Ans: b, LO: 2.5, Section 2.5, Bloom: K, Difficulty: Easy, Min: 1, AACSB: none, AICPA FC: none, IMA: none

Solution: The more trips you make to the store, the more likely you are to make unplanned additional purchases.