

BUSINESS CALCULATIONS

Acquiring a high level of mathematics skill to solve business problems is a challenge for all prospective business employees. This event provides recognition for FBLA members who have an understanding of mathematical functions in business applications.

Competencies

Test will focus on mathematics skill to solve business problems performed in the business environment. The topics listed below are prioritized, listing first the most important content areas of the tests; grouped topics are equal.

- Marks-ups and discounts
- Bank records, consumer credit, depreciation, insurance, interest rates, investments, payroll, ratios and portions
- Taxes

Procedures/Tips

1. Review the guidelines for this event found in the Competitive Events section of the current edition of the *Chapter Management Handbook*. You should have a copy of the guidelines and review them carefully.
2. Study from both South Western and Glencoe/McGraw Hill textbooks and review vocabulary lists in each book's glossary. FBLA tests are written from different sources. Do not rely solely on school texts for study. Check out library texts to gain a broader range of familiarity. Take as many practice tests as possible.
3. Dress according to the established dress code. If dress code is not followed, participant will be disqualified.
4. Check the location of your test well before the time of competition. Plan to arrive 15 minutes before the scheduled time for the test. Remember the elevators can be slow and hallways crowded.
5. Bring several sharpened No. 2 pencils with erasers. A calculator will be provided.
6. Check the event signs to be certain you are in the correct room or section of the room. More than one event may be tested in one room at the same time.
7. Listen carefully to instructions given by the event administrator. One hour is allowed for the actual test. Carefully read the instructions on the cover page of the test. Pace yourself during the testing to allow time to work quickly but accurately. Try to answer all the questions.
8. Make certain your answers are clearly marked and all stray marks are erased.
9. Turn in your test as soon as you are finished. A tiebreaker is resolved by evaluating the students' performance on the final ten questions of the exam and then by the time.
10. Take pride in your accomplishments and share the excitement of the awards program.

BUSINESS CALCULATIONS SAMPLE TEST QUESTIONS

Multiple Choice

- Christopher scored 80% on his math exam. If there were 120 questions on the exam, how many did he answer correctly?
 - 960
 - 40
 - 100
 - 96
- Sarah made 15 free throws in 23 attempts. What was the percent of free throws she made?
 - 65
 - 6.5
 - 34.5
 - 8
- A dozen eggs are selling for \$1.40 this week, up \$0.20 from last week. By what percent did the price increase from last week?
 - 28
 - 75
 - 17
 - 85
- Barry got a loan of \$1500. He has to repay it in nine months and will be charged 8% simple interest. What is the amount of interest he will pay?
 - \$187.50
 - \$300.00
 - \$ 90.00
 - \$ 20.83
- Hal's Appliances gives customers a cash discount of 2/10, n/30. If a customer receives a bill dated May 12 for \$300, what is the amount due if the bill is paid May 21?
 - \$306
 - \$ 6
 - \$310
 - \$294
- Wearever Shoe Store marks up its shoes 30% of cost. If a pair of shoes costs the store \$25, what is the selling price?
 - \$75.00
 - \$32.50
 - \$17.50
 - \$24.17
- All salespeople at The Broadway Clothing Store are paid a weekly salary of \$300 plus a commission of 10% on all sales over \$10,000. If Louis Arund had \$12,000 in sales for a week, what would be his gross pay for the week?
 - \$ 300
 - \$ 500
 - \$ 800
 - \$1,500
- Matthew is paid \$8 an hour for a 40-hour week. All overtime work is paid at time-and-a-half. How much will he earn for working 60 hours?
 - \$480
 - \$240
 - \$320
 - \$560
- Stacy's bank statement balance is \$823.41. Stacy has two outstanding checks for \$32.63 and \$115.95. She also has an outstanding deposit of \$461.83. What is her adjusted bank statement balance?
 - \$ 790.78
 - \$ 674.83
 - \$1,136.66
 - \$1,285.24
- A company makes a product at a cost of \$2.10 for the first 10,000 manufactured, and at a cost of \$1.90 for the next 10,000. During the month of August, the company sold 15,000 of the product for \$3.50 each. How much did the company earn?
 - \$52,500
 - \$32,800
 - \$21,000
 - \$22,800

11. An office is scheduled to be carpeted soon. The office is 20 feet x 24 feet overall, but has a small space (3 feet x 3 feet) that will not be carpeted. If carpet is selling at \$22 a square yard, how much will it cost to carpet this office?
- \$ 480
 - \$ 471
 - \$1,151
 - \$1,271
12. Bob wishes to fertilize his lawn. A bag of lawn fertilizer covers 5,000 square feet. If his property measures 85 feet wide and 125 feet long, how many bags of fertilizer will he need to buy?
- 2
 - 3
 - 4
 - 5
13. Four people ordered three 12-inch pizzas with the agreement that all would share equally. How much pizza would each person receive?
- $\frac{3}{4}$
 - $\frac{1}{2}$
 - $\frac{5}{8}$
 - $\frac{1}{4}$
14. Each sprinkler system waters grass in a circular area with a 5-foot radius. If three sprinklers were placed in a straight line so they would overlap by 6 inches, what length would be watered in this design?
- 30
 - 11
 - 29
 - 17
15. Carol paid \$30 for a taxi ride from the airport to her home, including a \$2 tip. According to the sign posted in the taxi, the fare is based on a charge of \$3.00 for the first mile and \$0.50 for each additional one-half mile. How many miles was Carol charged for?
- 23
 - 24
 - 25
 - 26
16. You wish to lay one row of bricks on the side of a house that measures 50 feet. Given that each brick is 8 inches long, how many bricks are needed to complete this task?
- 55
 - 65
 - 58
 - 75
17. \$255 is 60% of _____.
- 153
 - 425
 - 15,300
 - 212.50
18. Tyrone Washington is paid a 12% commission on every tuxedo he sells. If Tyrone sells 2 tuxedos for \$350.98 each, what is his commission?
- \$42.18
 - \$84.24
 - \$94.24
 - \$24.00
19. Luke Deering earns a graduated commission. He earns a 5% commission on the first \$3,000 of sales, a 10% commission on the second \$3,000 of sales, and a 20% commission on the sales over \$6,000. If his sales for the month were \$13,500, what was his total commission?
- \$1,200
 - \$ 450
 - \$1,950
 - \$2,700
20. LaBelle Carter sells textbooks. She is paid a graduated commission. She earns a 10% commission on the first \$5,000 of sales, 12% commission on the next \$5,000 of sales, and 15% on all sales over \$10,000. If her sales for the month total \$14,000, what is her total commission?
- \$1,700
 - \$1,680
 - \$1,500
 - \$2,100

21. Susan Rubacky borrowed \$4,000 from her bank to pay for her computer. The loan was to be repaid in 90 days. The bank charged 11% interest. Figure the maturity value of Susan's loan using the ordinary interest method.

- a. \$4,110.00
- b. \$ 110.00
- c. \$ 108.49
- d. \$4,108.49

22. Gregorio's Appliances bought a TV that had a list price of \$299.50 with a 10% trade-in discount rate. What was the net price?

- a. \$ 59.90
- b. \$ 29.95
- c. \$269.55
- d. \$239.60

23. The Belknap Wholesale catalog has a list price of \$28.50 for a set of wrenches. The net price after the trade discount is \$21.37. What is the trade discount rate?

- a. 25%
- b. 5.34%
- c. 13.29%
- d. 2.5%

24. On October 20, Hardware Distributors sold goods to Peal Hardware that totaled \$1,574.80. Terms of the invoice were 2/10, n/30. If the invoice was paid on October 31, what was the cash price?

- a. \$1,574.80
- b. \$ 157.48
- c. \$ 15.75
- d. \$ 31.50

25. A desktop copier from Sutherland Wholesalers has a catalog price of \$439.75 with a 15/10/5 chain discount. What is the net price?

- a. \$ 65.96
- b. \$ 43.98
- c. \$ 21.99
- d. \$373.79

Use the exact interest method in problems 26-28 to calculate the maturity value.

	PRINCIPAL	RATE	TERM	MATURITY VALUE
26.	\$1,600	8%	240 days	
27.	\$3,500	10%	90 days	
28.	\$869	11%	72 days	

26.

- a. \$ 85.33
- b. \$1,685.33
- c. \$ 84.16
- d. \$1,684.16

27.

- a. \$3,587.80
- b. \$ 87.50
- c. \$3,586.30
- d. \$ 86.30

28.

- a. \$887.86
- b. \$ 18.86
- c. \$ 19.12
- d. \$888.12

29. Canteen Cooperative serves soup as part of its daily menu. The soup is packed in cans containing 46 oz each; the average portion size is $7\frac{1}{3}$ oz. On an average day, 125 portions of soup are served. To the nearest whole can, how many cans of soup are used each day?

- a. 6
- b. 7
- c. 20
- d. 25

30. James Smith is a salesperson that is paid an hourly rate of \$11, with overtime at time and a half for any hours in excess of 40 per week. In addition, he also receives a 7½% commission on all sales over \$2,500 per week. James worked a total of 53 hours last week and had sales totaling \$8,659. What were his gross earnings for the week?

- a. \$ 583.00
- b. \$ 654.50
- c. \$1,303.93
- d. \$1,116.43

31. Brown's Hosiery store had an inventory worth \$27,650 on March 1. During March, Brown's ordered and received 50 pairs of men's socks costing \$2.75 each, 90 pairs of women's sport socks costing \$3.50 each, and 40 pairs of children's socks each costing \$1.50. On March 31, Brown's inventory was \$21,567. What was the cost of goods sold for March?
- \$6,595.50
 - \$6,083.00
 - \$5,570.50
 - \$5,675.00
32. Hawthorne Manufacturing had an annual gross income of \$1,495,813. Deductions totaled \$959,896. If taxable income is over \$100,000, the federal corporate tax is \$22,250 plus 39% of the amount over \$100,000. What federal corporate income tax must Hawthorne pay for the year?
- \$170,007.63
 - \$ 95,989.61
 - \$193,367.07
 - \$192,257.63
33. Kris purchased a whole life insurance policy with a face value of \$70,000. The annual premium is \$14.57 per \$1,000. What is her annual premium?
- \$ 101.99
 - \$1,019.90
 - \$1,091.90
 - \$1,099.00
34. Harrison Household Products, Inc. produces automatic ice crushers. Harrison's fixed costs are \$822,000. Variable costs per ice crusher are \$13.20. If Harrison sells each unit for \$19.95, how many units must be sold for it to break event?
- 120,778
 - 121,778
 - 122,778
 - 123,778
35. Sees Candy is shipping 860 pounds of holiday candy by air freight. Pickup is \$6.25 per 100 pounds or fractional part. Delivery is \$6.85 per 100 pounds or fractional part. The air freight rate is \$72.50 per 100 pounds charged on the actual number of pounds shipped. There is a 5% tax on the air freight. What is the total shipping cost?
- \$623.50
 - \$685.15
 - \$714.40
 - \$772.58
36. Orbit sales mistakenly included 5% sales tax in a bill to a tax-exempt organization. The invoice showed a total of \$247.80 that included the 5% sales tax. What is the amount of tax that must be refunded?
- \$12.39
 - \$11.50
 - \$11.80
 - \$10.95
- Problems 37-40. Widget Industries has rented booth space at the International Trade Show Center. In the past, Widget has spent 7/16 of every dollar on exhibit construction and space rental, 1/8 for transportation, 11/32 on specialty advertising and personnel, and the balance on cleanup and removal of the exhibit after the show. Widget has budgeted \$228,000 for the coming show.*
37. How much will Widget spend on construction and space rental?
- \$ 99,750
 - \$ 9,750
 - \$ 98,650
 - \$109,750
38. How much will Widget spend on transportation?
- \$228,000
 - \$ 28,500
 - \$ 78,375
 - \$ 99,750
39. How much will Widget spend on specialty advertising and personnel?
- \$28,500
 - \$78,375
 - \$21,375
 - \$99,750
40. How much will Widget spend on cleanup?
- \$28,500
 - \$78,375
 - \$21,375
 - \$99,750

Business Calculations

	ANSWER		ANSWER		ANSWER		ANSWER
1.	D	11.	C	21.	A	31.	A
2.	A	12.	B	22.	C	32.	D
3.	C	13.	A	23.	A	33.	B
4.	C	14.	C	24.	A	34.	B
5.	D	15.	D	25.	D	35.	D
6.	B	16.	D	26.	D	36.	C
7.	B	17.	B	27.	C	37.	A
8.	D	18.	B	28.	A	38.	B
9.	C	19.	C	29.	C	39.	B
10.	D	20.	A	30.	D	40.	C

BUSINESS CALCULATIONS

Overview

Acquiring a high level of mathematics skill to solve business problems is a challenge for all prospective business employees. This event provides recognition for FBLA members who have an understanding of mathematical functions in business applications.

This is an individual online test.

Competencies and Task Lists

<http://www.fbla-pbl.org/docs/ct/FBLA/BUSINESSCALCULATIONS.pdf>

Website Resources

- How to Calculate Depreciation
<http://www.assetaide.com/depreciation/calculation.html>
- Markup
http://www.321know.com/g84_max1.htm
- Meters and Liters: Converting to the Metric System of Measurements
http://www.learner.org/interactives/dailymath/meters_liters.html
- The Metrics International System of Units
<http://www.wsdot.wa.gov/reference/metrics/factors.htm>

BUSINESS CALCULATIONS SAMPLE QUESTIONS

1. There are several methods of calculating depreciation. One method allows you to claim depreciation over a fixed number of years depending on the class life of the property. What is this method?
 - a. declining balance method
 - b. modified accelerated cost recovery system
 - c. sum of the years digits method
 - d. straight line method

Competency: Depreciation

2. An oven costing \$1,200 will be used for five years and then traded in for an estimated \$750. Using the sum-of-the-years-digits method, find the book value of the oven at the end of the second year.
 - a. \$750
 - b. \$930
 - c. \$1,000
 - d. \$1,030

Competency: Depreciation

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3. The Brown Trucking Company purchased a truck for \$19,000. They use the MACRS method of depreciation. What is the asset's value at the end of year three if the rate of depreciation is 20 percent for Year 1, 32 percent for Year 2, and 19.2 percent for Year 3?
- a. \$5,472.00
 - b. \$13,528.00
 - c. \$2,188.00
 - d. \$6,080.00

Competency: Depreciation

4. All Sports Trophies made this deposit: 6 hundreds; 14 fifties; and checks for \$85, \$23.50, \$45, \$17.50, \$17.27, \$32.35, \$65. They got cash back of 50 one dollar bills, 20 five dollar bills, 10 ten dollar bills, and 8 twenty dollar bills. Find the total deposit.
- a. \$1,585.62
 - b. \$890.00
 - c. \$1,175.62
 - d. \$410.00

Competency: Bank Records

5. What are Chelsea's outstanding deposits if she has a statement balance of \$648.35, outstanding checks of \$44.89 and an adjusted balance of \$794.83?
- a. \$1398.29
 - b. \$101.59
 - c. \$794.83
 - d. \$191.37

Competency: Bank Records

6. Which one of the following services is **not** typically available to customers with online banking?
- a. virus and security software downloads
 - b. pay bills electronically instead of through the mail
 - c. transfer money between accounts
 - d. account access 24 hours a day, 7 days a week

Competency: Bank Records

7. Samuel bought a new car with a purchase price of \$35,340. He is charged a 6.5 percent sales tax on the purchase price. What is the total price with sales tax?
- a. \$37,637.10
 - b. \$2,297.10
 - c. \$33,042.90
 - d. \$40,776.92

Competency: Consumer Credit

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8. The Wards bought a house at its market value of \$82,000. They made a 5 percent down payment and paid these closing costs: legal fees, \$550; property survey, \$310; title insurance, \$275; inspection fees, \$240; and points, \$1,558. What is the total of the closing costs?
- a. \$4,100
 - b. \$7,033
 - c. \$1,558
 - d. \$2,933

Competency: Consumer Credit

9. Sonja borrowed \$1,575 and made 18 payments of \$105.25. How much did she pay in interest?
- a. \$319.50
 - b. \$1,575.00
 - c. \$1,984.50
 - d. \$3,469.50

Competency: Consumer Credit

10. When Josie Shell received her July credit card statement she found these items listed: 7/1, previous balance, \$281.59; 7/7, purchase, \$168.99; 7/10, purchase \$57.98 and 7/25, payment, \$200. Josie's credit card company uses a 1.8 percent monthly periodic rate. Find the finance charge if Josie's card company uses the average daily balance excluding new purchases.
- a. \$5.55
 - b. \$7.45
 - c. \$9.15
 - d. \$4.26

Competency: Consumer Credit

11. Kenny Lee's credit card statement for May showed a previous balance of \$289.16, new purchases of \$107.99, a membership fee of \$35, a finance charge of \$5.96, and a payment of \$100. What is his new balance?
- a. \$326.16
 - b. \$338.11
 - c. \$538.11
 - d. \$389.16

Competency: Consumer Credit

12. Donna works in a marketing department of a printing company. In a meeting with her supervisors, Donna wants to demonstrate that a marketing campaign she designed has resulted in increased sales over the last four months. What type of graphic illustration should Donna use to illustrate her campaign's success?
- a. four color word graph
 - b. line graph
 - c. bar graph
 - d. circle graph

Competency: Data Analysis and Reporting

13. Which one of the following do you **not** need to know to calculate the breakeven point?
- variable costs for manufacturing each unit of the product
 - a competitor's price for the same product
 - fixed costs for manufacturing each unit of the product
 - expected selling price of each unit of the product

Competency: Data Analysis and Reporting

AGE	15-YEAR TERM	WHOLE LIFE			
20	1.56	9.65			
30	2.36	14.78			
40	6.87	27.12			
50	10.71	42.77			

14. What would Chelsea's premium have been for the first year if she had purchased \$250,000 whole life when she was 20?
- \$369.50
 - \$2,462.50
 - \$241.25
 - \$2,412.50

Competency: Insurance

15. Rose pays for a general health plan, a dental health plan, and a vision health plan through her employer. The monthly premiums are general health, \$299; dental health, \$265; and vision health, \$59. Her employer's share of these plans is: general health, 35 percent; dental health, 45 percent; and vision health, 75 percent. What is Rose's total monthly premium for all plans and what is her employer's share?
- \$623.00; \$73.59
 - \$354.85; \$268.15
 - \$268.15; \$185.00
 - \$623.00; \$354.85

Competency: Insurance

16. Hailey Kaufman borrowed \$1,000 at 6 percent for 85 days. The bank determined the interest she will pay based on a 360 day year. What interest method did the bank use?
- rule of 72 method
 - exact interest method
 - ordinary interest method
 - rule of 78 method

Competency: Interest Rates

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17. An investor earned \$1,170 interest on funds invested at 9.75 percent annual simple interest for four years. How much was invested?
- a. \$3,500.00
 - b. \$2,870.00
 - c. \$3,000.00
 - d. \$3,250.00

Competency: Interest Rates

18. Jane borrows \$120,000 at 9.5 percent per annum interest compounding quarterly. She pays regular installments to the bank at the end of each quarter and intends to pay off the loan within four years. What quarterly installment does Jane pay the bank?
- a. \$11,234.68
 - b. \$9,102.70
 - c. \$10,105.62
 - d. \$9,000.00

Competency: Interest Rates

19. From January through June, Superior Advertising took three inventories of merchandise: \$88,000, \$188,200, and \$124,600. The cost of merchandise sold during the six-month period was \$601,200. What was the turnover rate for these six months?
- a. 1.67
 - b. 4.50
 - c. 9.00
 - d. 2.50

Competency: Inventory

20. Amy O'Brien is comparing her retirement benefits at age 62 and 65. If she retires at age 65, her monthly benefit will be \$2,754. If she retires at age 62, her monthly benefit will be reduced by 20 percent. What is her monthly benefit at age 62?
- a. \$3,442.50
 - b. \$550.80
 - c. \$2,303.20
 - d. \$2,203.20

Competency: Investments

21. Find the total investment in 100 shares of stock bought at 24 when the purchase is handled by a full service broker who charges \$17 plus 1.3 percent of the transaction amount?
- a. \$2,548.20
 - b. \$2,431.20
 - c. \$31.20
 - d. \$2,448.20

Competency: Investments

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22. A retailer ordered eight dozen jackets for \$14.50 each. The list price of the jacket is \$25.00. What will be the amount of the invoice when it is received?
- a. \$2,400.00
 - b. \$1,392.00
 - c. \$116.00
 - d. \$1,008.00

Competency: Mark-ups and Discounts

23. Caroline purchased a new car with the purchase price of \$32,230. The manufacturer offers a \$1,500 rebate. Sales tax is 5 percent of the purchase price. What is the purchase price after the rebate and the tax is calculated?
- a. \$33,841.50
 - b. \$32,341.50
 - c. \$1,611.50
 - d. \$30,745.00

Competency: Mark-ups and Discounts

24. A retailer wants to sell 200 electronic toys at its after Christmas sale. The toys cost the store \$15 each. The store's overhead related to the toys is \$5,000. Before Christmas the toys sold for \$55 each. What markup was earned on each toy that sold at the pre-Christmas price?
- a. \$45
 - b. \$50
 - c. \$35
 - d. \$40

Competency: Mark-ups and Discounts

25. A company pays their sales staff a monthly commission of 4 percent on the first \$15,000 of sales, 6 percent on the next \$20,000 of sales, and 7.5 percent on all sales above \$35,000. What amount would Tony Crenshaw earn if his sales for a month were \$41,000?
- a. \$3,075
 - b. \$2,625
 - c. \$2,250
 - d. \$2,550

Competency: Payroll

26. Yvonne works for \$14.35 an hour and gets paid time-and-a-half for overtime hours and double-time for weekend hours. This week Yvonne worked 40 regular hours and 11 overtime hours. Last week Yvonne worked 35 regular hours and 11 weekend hours. Which week did she earn more in wages and by how much?
- a. this week, \$7.17
 - b. this week, \$7.22
 - c. last week, \$7.22
 - d. last week, \$7.17

Competency: Payroll

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27. Social Security tax is 6.2 percent per dollar up to \$87,900 of annual earnings. Roy Potter has year to date earnings of \$83,215 and current monthly earnings of \$4,700. What is the amount of Social Security to withhold for the current monthly earnings?
- \$0
 - \$5,159.33
 - \$290.47
 - \$291.40

Competency: Payroll

28. A department store has current assets of \$320,750 and current liabilities of \$198,545. What is the store's current ratio, to the nearest tenth?
- 2.0
 - 2.5
 - 1.0
 - 1.6

Competency: Ratios and Proportions

29. Bill ships books in 25 lb. boxes. Twelve boxes cost \$180 to ship. Bill wants to cut his shipping costs by 15 percent. How much less would his cost be per box?
- \$1.25
 - \$2.50
 - \$2.25
 - \$1.75

Competency: Ratios and Proportions

30. Redmond's property is assessed at \$92,700. The school rate in his district is 1.52 cents per \$1. What is Redmond's school tax?
- \$1,409.04
 - \$6,098.68
 - \$140,904.00
 - \$60.98

Competency: Taxes

Business Calculations Answer Key

1)	B	11)	B	21)	D
2)	B	12)	B	22)	B
3)	A	13)	B	23)	B
4)	C	14)	B	24)	D
5)	D	15)	B	25)	C
6)	A	16)	C	26)	D
7)	A	17)	C	27)	D
8)	D	18)	B	28)	D
9)	A	19)	B	29)	C
10)	D	20)	D	30)	A

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Web Site Resources

- How to Calculate Depreciation
<http://www.assetaide.com/depreciation/calculation.html>
- Markup
http://www.321know.com/g84_max1.htm
- Meters and Liters: Converting to the Metric System of Measurements
http://www.learner.org/interactives/dailymath/meters_liters.html
- The Metrics International System of Units
<http://www.wsdot.wa.gov/reference/metrics/factors.htm>

BUSINESS CALCULATIONS SAMPLE QUESTIONS

1. A store marks up its merchandise 45 percent of the selling price. If the markup amount on a camera is \$265.75, what is the selling price of the camera?
 - a. \$611.11
 - b. \$119.59
 - c. \$590.56
 - d. \$590.65
2. What is the reduction if a \$16.85 item is reduced by 25 percent?
 - a. \$4.22
 - b. \$4.21
 - c. \$12.21
 - d. \$12.64
3. You have a \$1,026.10 invoice dated June 5 with terms of 2/10, net 30. Assuming that you paid the invoice on June 14, what is the net amount you should pay?
 - a. \$1,005.57
 - b. \$1,005.58
 - c. \$1,050.59
 - d. \$1,026.10
4. Cindy is a sales representative for a publishing company. She earns \$500 per week plus a 3 percent commission. Last week her total sales were \$75,000. What were her weekly earnings?
 - a. \$2,250
 - b. \$2,350
 - c. \$2,450
 - d. \$2,750

-
5. Caleb's goal for October is to earn a commission of \$8,000. If he receives a commission of 8 percent, what must his total sales be for October in order to achieve his goal?
- \$64,000
 - \$800,000
 - \$100,000
 - \$80,000
6. Miranda earned \$472.50 in interest on her savings account last year. If the rate of interest is 4.5 percent, how much did Miranda have on deposit at the beginning of last year?
- \$11,812.50
 - \$10,500.00
 - \$11,117.65
 - \$21,262.50
7. What is the total simple interest for a \$150.66 loan for two years at a 5 percent interest rate?
- \$15.07
 - \$7.53
 - \$7.52
 - \$15.06
8. What is the rate of interest if the interest on \$1,216.24 for 96 days is \$19.46? Use 360 days in a year.
- 5 percent
 - 9 percent
 - 8 percent
 - 6 percent
9. A company's expense to revenue ratio is 4:7. What is this month's revenue if expenses were \$8,000?
- \$15,000
 - \$28,000
 - \$32,000
 - \$14,000
10. From a total yearly budget of \$18,000,000, the city of Metropolis spends \$3,000,000 on education. What is the ratio of the amount spent on education to the amount not spent on education?
- 1 to 5
 - 2 to 5
 - 1 to 4
 - 2 to 3
11. What will be the finance charge on a credit card statement if the unpaid balance was \$829.25? The credit card company has an annual finance rate of 15.5 percent.
- \$10.71
 - \$9.60
 - \$10.40
 - \$107.11
12. Ricardo borrowed \$9,000 to buy a car. To date he has paid \$1,800 of his loan. What percent of the loan is paid off?
- 20 percent
 - 25 percent
 - 10 percent
 - 15 percent

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13. What is the annual depreciation for a car that cost \$7,900 and has a trade-in value of \$1,950 after 4 $\frac{1}{2}$ years?
- \$1,755.56
 - \$1,322.00
 - \$1,300.00
 - \$1,487.50
14. Find the market value of a \$1,000 bond listed at 93 $\frac{5}{8}$.
- \$935.50
 - \$936.60
 - \$906.25
 - \$936.25
15. Wages payable for ABC Company in 2010 were \$11,185. In 2009, wages payable were \$5,872. What is the percent increase in wages payable from 2009 to 2010?
- 90.5 percent
 - 47.5 percent
 - 62.5 percent
 - 74.5 percent
16. Latoya's bank balance was \$1,564.69 and her checkbook balance was \$1,604.75. She reviewed her banking records and discovered three outstanding checks: \$29.63, \$95.56, and \$48.75. She also discovered that a deposit of \$425 had been entered twice in her check register. A deposit of \$215 had been credited on the bank statement but **not** recorded in the check register. The bank assessed a \$4 service charge. What is her reconciled balance?
- \$1,390.75
 - \$1,994.75
 - \$1,694.75
 - \$1,564.69
17. At the beginning of the month, Ida's checkbook balance was \$321.75, but she had forgotten to record in her check register a deposit for \$225. During the month, she wrote checks for \$132.50, \$68.75, and \$93.32. What should be the balance in her check register?
- \$27.28
 - \$252.18
 - \$354.50
 - \$252.68
18. A homeowner insurance policy was cancelled at the end of 125 days. If the yearly premium was \$361, what amount was refunded to the customer? Use 365 days in a year.
- \$223.63
 - \$123.63
 - \$237.37
 - \$235.65
19. Mr. Bachner wants to insure his home, which is valued at \$356,000. The annual rate is \$.56 per \$100, and the term rate for five years is 4.4 times the annual rate. How much will Mr. Bachner save by insuring his home under the five-year term instead of paying the annual rate for the five years?
- \$1,196.16
 - \$2,096
 - \$1,990
 - \$1,993.60

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20. The net price of goods from Paul's Fresh Produce to the local Frank's Food Market is \$3,576.90. The terms are 3/10, n/30. The date of the invoice is May 1. The date paid is May 6. What is the cash price?
- \$3,469.59
 - \$3,150.30
 - \$3,218.22
 - \$2,750.30
21. Lauren received a single-payment loan of \$5,000 for 90 days at 9 percent ordinary interest. What is the amount of ordinary interest owed?
- \$112.50
 - \$150.00
 - \$132.50
 - \$450.00
22. Odessa Hobbs purchased 2,000 shares of XZZ stock for \$12,780. She sold the stock for \$7 per share and paid a sales commission of \$26. What is the profit or loss from the sale?
- \$1,194 profit
 - \$1,328 loss
 - \$1,278 loss
 - \$206 profit
23. Lucas Hardware has recently purchased three cash registers. Each cash register cost \$1,800 and has an estimated life of 5 years. The trade-in value of each cash register is expected to be \$100 at the end of five years. Using the straight-line method, find the annual depreciation for all three cash registers.
- \$1,200
 - \$1,400
 - \$1,375
 - \$1,020
24. The cash price of a music system is \$2,859, and the installment price is \$3,115.35. How much is the finance charge?
- \$21.36
 - \$115.35
 - \$10.68
 - \$256.35
25. Jose's Market is assessed for \$125,000. The current tax rate is \$92.45 per \$1,000 of assessed valuation. Calculate the tax due.
- \$115.56
 - \$110.09
 - \$11,556.25
 - \$1155.63
26. If four video cassettes cost \$75, how many did Kim buy if she received \$31.25 in change from her \$500 check?
- 25
 - 20
 - 32
 - 40

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27. Nancy White, an account representative for Kreative Kids, is paid a 4 percent commission rate and a salary of \$200 each week. If her sales total \$25,510 this week, find her gross earnings for the week.
- a. \$476.80
 - b. \$417.00
 - c. \$1,220.40
 - d. \$298.00
28. Auburn Tire offers a 74-pound truck tire for \$182 plus tax. If sales tax is 7.5 percent and excise tax is \$4.50 plus 30 cents per pound over 70 pounds, find the total cost including tax.
- a. \$222.35
 - b. \$195.65
 - c. \$208.70
 - d. \$201.35
29. Maegan has a tax liability is \$25,112, tax credits of \$7,650, other taxes of \$2,211, and taxes paid of \$21,200. How much will she receive as a refund or owe?
- a. \$13,773.00 owed
 - b. \$392.00 refund
 - c. \$1,527.00 refund
 - d. \$3,912.00 owed
30. Fitness Center received three new weight machines on May 15 and the invoice in the amount of \$1,215 for these good arrived on May 1 with discount terms of 2/15, n/30, ROG. How much must be paid if the invoice is paid on May 28?
- a. \$1,032.75
 - b. \$1,115.00
 - c. \$1,190.70
 - d. \$1,215.99

Business Calculations Answer Key

1) C	11) A	21) A
2) B	12) A	22) A
3) B	13) B	23) D
4) D	14) D	24) D
5) C	15) A	25) C
6) B	16) A	26) A
7) A	17) B	27) C
8) D	18) C	28) D
9) D	19) A	29) C
10) A	20) A	30) C

Overview

Acquiring a high level of mathematics skill to solve business problems is a challenge for all prospective business employees. This event provides recognition for FBLA members who have an understanding of mathematical functions in business applications.

Competencies

The topics listed below are prioritized, listing first the most important content areas of the test.

- Marks-ups and discounts
- Investments
- Bank records
- Insurance
- Interest rates
- Payroll
- Ratios and proportions
- Depreciation
- Consumer credit
- Taxes

Procedures/Tips

- Review the Competitive Events Tips in the front of the book.

Web Site Resources

- <http://www.assetaide.com/depreciation/calculation.html>
- http://www.321know.com/g84_max1.htm
- http://www.learner.org/interactives/dailymath/meters_liters.html
- <http://www.wsdot.wa.gov/reference/metrics/factors.htm>
- <http://math.about.com/od/businessmath/tp/businessmathtp.htm>

Business Calculations Sample Questions

1. Laura took out a short-term loan of \$4,800. She has to repay it in 5 months and will be charged 12% simple interest. What is the amount of interest she will pay?
 - a. \$2,880.00
 - b. \$ 360.00
 - c. \$ 186.67
 - d. \$ 240.00
2. Richard heard about another bank that will pay him 1.5% simple interest on the last day of the month based on his ending balance after charges. How much interest would Richard receive using the ending balance from the question above?
 - a. \$84.37
 - b. \$ 8.41
 - c. \$ 8.46
 - d. \$84.14
3. This year's inflation rate is 2.7%. You placed \$2,000 in a savings account at the beginning of the year earning 2%. How much must you deposit in the account at the end of the year to hold the same purchasing value?
 - a. \$40.00
 - b. \$14.00
 - c. \$54.00
 - d. \$45.00
4. Andy's grandparents gave him a \$100 gift certificate to a sporting goods store. Andy found Nike shocks, but they cost \$120. After the holidays, the shocks went on sale for 25% off. How much money was left after he bought the Nike shocks on sale if tax was 8%?
 - a. \$90.00
 - b. \$22.80
 - c. \$11.50
 - d. \$ 2.80
5. \$521 is 40% of what amount?
 - a. \$ 312.60
 - b. \$1,302.50
 - c. \$ 868.33
 - d. \$ 208.40
6. If I buy a \$20,000 truck for cash, the dealership will give me \$2,000 cash back. If I pay \$4,000 down, I can finance my truck for 4 years and pay \$350/mo. How much more does financing cost me totally?
 - a. \$ 800
 - b. \$2,800
 - c. \$2,000
 - d. \$3,200
7. Lacie earns an annual salary of \$68,300. She is paid bi-weekly. What is her gross bi-weekly pay?
 - a. \$1,313.46
 - b. \$2,626.92
 - c. \$2,845.83
 - d. \$5,691.67

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8. The carpet chosen by Callis International for their reception area was \$16.75 a square yard. What price should the store quote for the carpet if the reception area is 12 ft. 6 in. by 18 ft.?
 - a. \$418.75
 - b. \$481.25
 - c. \$480.75
 - d. \$415.25

 9. Marcy received a statement from the county assessor's office that stated her property was valued at \$76,780. Later she received her tax bill. The percentage used to find the assessed value was 20%, and the tax rate was \$10.9876 per \$100. How much was Marcy's total tax bill?
 - a. \$6,578.92
 - b. \$1,687.26
 - c. \$8,436.27
 - d. \$1,878.26

 10. Katy's factory produced 800 tables at a total cost of \$19,200. If direct materials amounted to \$11,814 and direct labor equaled \$5,226, how much was overhead as a percentage of direct materials?
 - a. 41.32%
 - b. 11.25%
 - c. 18.28%
 - d. 44.24%

 11. Find the total investment in 100 shares of stock bought at 24 when the purchase is handled by a full-service broker who charges \$17 plus 1.3% of the transaction amount?
 - a. \$2,548.20
 - b. \$2,430.16
 - c. \$2,448.20
 - d. \$2,417.00

 12. KayBees purchased computer games for \$132/doz. Each game retails for \$29.95. To the nearest tenth, what is the rate of markup based on Johnny's cost?
 - a. 272.3%
 - b. 172.3%
 - c. 77.1%
 - d. 8.3%

 13. Find the adjusted gross income for Mike and Carol if they invested \$4,000 in an IRA, had income from their business of \$16,000, and received \$25,000 from a life insurance policy upon death of a relative.
 - a. \$21,000
 - b. \$12,000
 - c. \$37,000
 - d. \$41,000

 14. An item costs \$520 and has a selling price of \$860. Calculate the markup based on cost.
 - a. 65.4%
 - b. 165.3%
 - c. 39.5%
 - d. 60.5%

 15. Anthony had a loan in the amount of \$7,500 at 18% for 2 years. What is the total amount Anthony repaid?
 - a. \$10,200
 - b. \$ 270
 - c. \$ 2,700
 - d. \$ 225

Use for the next 4 questions.

"Best Buy" marked a computer down from \$4,500 to \$3,300.

16. What is the markdown based on the old selling price?
 - a. 36.2%
 - b. 26.7%
 - c. 29%
 - d. 45%
17. What is the markdown based on the new selling price?
 - a. 36.2%
 - b. 27.5%
 - c. 45%
 - d. 29%
18. This computer did not sell at \$3,300. It was marked down an additional 20% from the \$3,300 price. What was its new selling price?
 - a. \$2,640
 - b. \$2,840
 - c. \$2,460
 - d. \$2,860
19. What was the total percent markdown based on its original price?
 - a. 58.6%
 - b. 46.7%
 - c. 50%
 - d. 41.3%

Use for the next 3 questions.

Suzanne is considering a \$250,000 business loan. The first is $8\frac{7}{8}\%$ ordinary interest. The second is $8\frac{7}{8}\%$ exact interest. She expects to repay the loan in 120 days.

20. What is the total interest due if Suzanne selects the ordinary interest arrangement?
 - a. \$7,395.83
 - b. \$7,294.52
 - c. \$7,216.43
 - d. \$7,316.67
21. What is the total interest due if Suzanne selects the exact interest arrangement?
 - a. \$7,294.52
 - b. \$7,395.83
 - c. \$7,316.67
 - d. \$7,216.43
22. Comparing the ordinary interest costs to the exact interest costs, Suzanne will pay how much, more or less?
 - a. \$ 79.16 less
 - b. \$179.40 more
 - c. \$101.31 more
 - d. \$101.31 less

Use for the next 7 questions. Use the chart to calculate your answers.

Regular Price	Sale Price	Markdown	Percent Off
\$52.79		\$12.80	
\$192.74			18.82%
\$544.66	\$444.66		
\$711.12	\$600.00	\$111.12	

23. Calculate the sale price for \$52.79
 - a. \$24.25
 - b. \$54.25
 - c. \$37.89
 - d. \$39.99

24. Calculate the markdown percentage for \$52.79
 - a. 12.80%
 - b. 75.75%
 - c. 88.20%
 - d. 24.25%

25. Calculate the sale price for \$192.74.
 - a. \$165.74
 - b. \$ 52.50
 - c. \$156.47
 - d. \$ 36.27

26. Calculate the amount of the markdown for \$192.74.
 - a. \$36.27
 - b. \$73.73
 - c. \$25.00
 - d. \$18.82

27. Calculate the amount of the markdown for \$544.66.
 - a. \$100.00
 - b. \$118.36
 - c. \$100.25
 - d. \$ 18.36

28. Calculate the markdown percentage for \$544.66.
 - a. 35.00%
 - b. 23.08%
 - c. 10.00%
 - d. 18.36%

29. Calculate the markdown percentage for \$711.12.
 - a. 84.37%
 - b. 16.36%
 - c. 83.64%
 - d. 15.63%

30. David has earned 9.9% simple interest for the last 8 months on \$4,500. What has he earned?
 - a. \$ 44.55
 - b. \$445.50
 - c. \$ 29.70
 - d. \$297.00

Business Calculations Answer Key

- 1) D
- 2) B
- 3) B
- 4) D
- 5) B
- 6) A
- 7) B
- 8) A
- 9) B
- 10) C

- 11) C
- 12) B
- 13) B
- 14) A
- 15) A
- 16) B
- 17) A
- 18) A
- 19) D
- 20) A

- 21) A
- 22) D
- 23) D
- 24) D
- 25) C
- 26) A
- 27) A
- 28) D
- 29) D
- 30) D