

ACCOUNTING MATHEMATICS CONCEPTS - PILOT (193)

—OPEN EVENT—

REGIONAL – 2017

DO NOT WRITE ON TEST BOOKLET

TOTAL POINTS _____ (*100 points*)

Failure to adhere to any of the following rules will result in disqualification:

- 1. Contestant must hand in this test booklet and all printouts. Failure to do so will result in disqualification.**
- 2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests or facsimile (handwritten, photocopied, or keyed) are allowed in the testing area.**
- 3. Electronic devices will be monitored according to ACT standards.**

No more than sixty (60) minutes testing time

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General Instructions

You have been hired as a Financial Assistant and will be keeping the accounting records for Professional Business Associates, located at 5454 Cleveland Avenue, Columbus, Ohio 43231. Professional Business Associates provides accounting and other financial services for clients. You will complete solutions for Professional Business Associates' as well as for clients.

Your name and/or school name should *NOT* appear on any work you submit for grading. Write your contestant number in the provided space. Staple all pages in order before you turn in your test.

Assumptions to make when taking this assessment:

1. Round all numbers to the nearest cent.
2. Yearly interest calculation is based on a 360 day year.
3. Overtime is given after 40 hours per week, unless specified in the question.
4. Our plant assets are purchased on January 1 of any given year, unless specified in the question.

Identify the letter of the choice that best completes the statement or answers the question.

1. Todd used his personal truck at work for 25% of the 52,224 miles he drove last year. His employer reimbursed work usage mileage at \$.55/mile. What was Todd's reimbursement at the end of the year?
 - A. \$7,180.80
 - B. \$7,833.60
 - C. \$13,056.00
 - D. \$14,361.60

2. PBA has estimated uncollectible accounts to be 4.3% of net sales. Net sales for the year was \$1,346,059.32. What amount will be allocated to the Allowance for Uncollectible Accounts?
 - A. \$578,805.51
 - B. \$146,665.59
 - C. \$57,880.55
 - D. \$5,788.06

3. Jeremy was injured on the job. He holds a disability policy that will pay 45% of his annual salary of \$72,500 while off work. What amount will Jeremy collect if he is paid semi-monthly?
 - A. \$1,254.81
 - B. \$2,509.41
 - C. \$2,559.81
 - D. \$1,359.38

4. Brad is a customer of PBA. Brad has requested more than the 30 days that a normal Accounts Receivable would give him. Both parties agreed on a \$9,600, 60-day, 11% note that was signed on August 12. Assuming Brad pays the note on the due date, what amount of interest will be collected?
 - A. \$1,222.46
 - B. \$1,056.00
 - C. \$422.36
 - D. \$176.00

5. Brad is a customer of PBA. Brad has requested more than the 30 days that a normal Accounts Receivable would give him. Both parties agreed on a \$9,600, 60-day, 11% note that was signed on August 12. What is the due date on the note?
 - A. October 9
 - B. October 11
 - C. October 13
 - D. October 15

6. Brad is a customer of PBA. Brad has requested more than the 30 days that a normal Accounts Receivable would give him. Both parties agreed on a \$9,600, 60-day, 11% note that was signed on August 12. What is the total value of the note on the due date?
- A. \$10,822.46
 B. \$10,656.00
 C. \$10,022.36
 D. \$9,776.00
7. Brad is a customer of PBA. Brad has requested more than the 30 days that a normal Accounts Receivable would give him. Both parties agreed on a \$9,600, 60-day, 11% note that was signed on August 12. Brad decides to pay off the note on the 47th day. How much interest would be collected?
- A. \$137.87
 B. \$336.23
 C. \$786.89
 D. \$1012.13
8. Kody borrowed \$1,000 and agreed to pay 5% interest over 4 months. What would be the interest that Kody would need to pay?
- A. \$35.67
 B. \$35.12
 C. \$16.67
 D. \$16.44
9. The regular price of an ounce of correction fluid is \$1.84. A 12-ounce bottle of correction fluid can be purchased for \$17.04. How much would be saved by purchasing correction fluid by the 12 ounce bottle?
- A. \$1.84
 B. \$5.04
 C. \$11.08
 D. there is no price differential
10. Looking at the following accounts, what would be the ending Owners Equity Balance:

Cash	\$36,000	Utilities Expense	\$8,950
Sales	\$79,400	Supplies	\$12,500
Salaries Expense	\$8,957	Accts Payable	\$13,512
Brad Sims Drawing	\$6,200	Brad Sims, Capital	\$56,112
Supplies Expense	\$6,121		

- A. \$49,912
 B. \$89,484
 C. \$105,284
 D. \$135,512

11. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. What is the depreciable cost of the asset?
- A. \$9,400
 - B. \$8,300
 - C. \$10,500
 - D. \$1,100
12. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. Using the straight-line method of depreciation, how much depreciation will be taken in the first year?
- A. \$1,880
 - B. \$2,980
 - C. \$1,660
 - D. \$1,836
13. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. Using the straight-line method of depreciation, what is the book value of the interactive whiteboard at the end of the first year?
- A. \$7,520
 - B. \$6,420
 - C. \$7,740
 - D. \$7,564
14. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. Using the straight-line method of depreciation, what is the book value of the interactive whiteboard at the end of year 3?
- A. \$1,100
 - B. \$4,420
 - C. \$7,740
 - D. \$9,400
15. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. The interactive whiteboard is depreciated using the straight-line method. On June 30 of year 4, the interactive whiteboard is broken beyond repair and discarded. What would be the amount of the adjustment recorded for depreciation of year 4?
- A. \$970
 - B. \$920
 - C. \$870
 - D. \$830

16. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. The interactive whiteboard is depreciated using the straight-line method. On June 30 of year 4, the interactive whiteboard is broken beyond repair and discarded. What amount would be recorded as a loss on the disposal of this plant asset?
- A. \$8,400
 - B. \$5,790
 - C. \$3,590
 - D. \$9,400

17. An interactive whiteboard is purchased on January 1 for \$9,400. It has a useful life of five years and a salvage value of \$1,100. The interactive whiteboard is depreciated using the straight-line method. On June 30 of year 4, the interactive whiteboard is broken beyond repair and discarded. What would be the value of the accumulated depreciation of the interactive whiteboard at the time of disposal?
- A. \$5,810
 - B. \$8,400
 - C. \$6,080
 - D. \$4,420

18. Using the accounting equation, solve for the missing amount.

Assets	\$72,388	Liabilities	\$2,340
Common Stock	???	Dividends	14,780
Revenue	54,045	Expenses	22,545

- A. \$19,060
 - B. \$21,322
 - C. \$53,328
 - D. \$16,642
19. If a plant asset costs \$4,200, has accumulated depreciation of \$2,600, and is sold for \$700, the gain or loss on disposal is:
- A. \$3,500 gain
 - B. \$3,500 loss
 - C. \$900 gain
 - D. \$900 loss
20. Keri is a website designer for Desi’s Dozen’s. Keri earns a regular hourly rate of \$26.12, as well as time and a half for overtime work on Saturdays and double time on Sundays. This week Keri worked 40 hours from Monday through Friday, 4 hours on Saturday, and 0 hours on Sunday. What is Keri’s total pay for the week?
- A. \$1,201.52
 - B. \$1,149.28
 - C. \$1,044.80
 - D. \$ 987.23

21. Jackson's Produce purchased 2,000 two-pound melons at 34 cents/pound and is shipping them from Texas to his store in Baltimore, Maryland. During the trip Jackson anticipates 60 pounds of shrinkage by the time it reaches the loading dock. From the dock to the time sitting on the shelves Jackson anticipates 10% of shrinkage from the remaining melons.

With total shrinkage allocated, what would be the total loss in dollars from our original purchase?

- A. \$277.00
 - B. \$204.12
 - C. \$154.36
 - D. \$133.96
22. Jackson's Produce purchased 2,000 two-pound melons at 34 cents/pound and is shipping them from Texas to his store in Baltimore, Maryland. During the trip Jackson anticipates 60 pounds of shrinkage by the time it reaches the loading dock. From the dock to the time sitting on the shelves Jackson anticipates 10% of shrinkage from the remaining melons.

Assuming all melons on the shelf sold and we sold the melons for 71 cents/pound, what would be the gross profit?

- A. \$1,312.02
 - B. \$1,970.23
 - C. \$2,217.54
 - D. \$2,517.66
23. Simpson Co. is trading in an old packing machine for a new packing machine. The original machine was purchased on January 1 and cost \$5,000 with a 5 year useful life and no salvage value. The Accumulated Depreciation using the Straight line Method up to this year is \$4,000. The new machine's original cost is \$9,000 with a 5 year useful life and no salvage. The transaction is taking place on December 1 of year 5.

What is the amount of depreciation of the old machine to be adjusted for this current year?

- A. \$1,266.87
 - B. \$1,466.67
 - C. \$916.67
 - D. \$1,600.00
24. Simpson Co. is trading in an old packing machine for a new packing machine. The original machine was purchased on January 1 and cost \$5,000 with a 5 year useful life and no salvage value. The Accumulated Depreciation using the Straight line Method up to this year is \$4,000. The new machine's original cost is \$9,000 with a 5 year useful life and no salvage. The transaction is taking place on December 1 of year 5.

What is the book value of the old machine at the time of trade-in?

- A. \$500.00
- B. \$246.47
- C. \$145.87
- D. \$83.33

25. Simpson Co. is trading in an old packing machine for a new packing machine. The original machine was purchased on January 1 and cost \$5,000 with a 5 year useful life and no salvage value. The Accumulated Depreciation using the Straight line Method up to this year is \$4,000. The new machine's original cost is \$9,000 with a 5 year useful life and no salvage. The transaction is taking place on December 1 of year 5.

What is the total value of our accumulated depreciation of the old machine after we make our adjusting entry?

- A. \$4,916.67
 - B. \$2,325.00
 - C. \$3,225.53
 - D. \$4,050.86
26. Simpson Co. is trading in an old packing machine for a new packing machine. The original machine was purchased on January 1 and cost \$5,000 with a 5 year useful life and no salvage value. The Accumulated Depreciation using the Straight line Method up to this year is \$4,000. The new machine's original cost is \$9,000 with a 5 year useful life and no salvage. The transaction is taking place on December 1 of year 5.

What is the adjustment for depreciation of the current year for our new machine?

- A. \$166.67
 - B. \$133.33
 - C. \$214.57
 - D. \$150.00
27. New Directions pays \$5,000 in advance for four months' rent on April 1. How much will New Directions adjust the Prepaid Rent account for on June 30?
- A. \$1,250
 - B. \$2,500
 - C. \$3,750
 - D. \$4,000

28. Lane earns a weekly salary of \$1,272 at Kim's Antiques. Next month Lane will be promoted from Assistant Manager to Senior Manager. In her new position she will be paid \$3,594 bi-weekly. How much more per year will Lane earn as a Senior Manager than as an Assistant Manager?
- A. \$20,112
 - B. \$13,112
 - C. \$13,867
 - D. \$27,300

29. Lane earns a weekly salary of \$1272 at Kim’s Antiques. Next month Lane will be promoted from Assistant Manager to Senior Manager. In her new position she will be paid \$3,594 bi-weekly. Assuming that Lane’s total tax liability moves from 26% to 29% with her new position, what will the increase in her tax liability be?

- A. \$17,197.44
- B. \$9,901.32
- C. \$3,655.89
- D. No Tax Liability Increase

30. Using LIFO (last in/first out) method of inventory valuation, what is the quantity of units in inventory after October 31?

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost
Sept. 1							25	\$6.10	\$152.50
Sept. 8	75	\$6.20	\$465.00						
Sept. 20				45	\$9.00	\$405.00			
Sept. 30				35	9.00	315.00			
Oct. 8				5	9.10	45.50			
Oct. 10	50	6.10	305.00						
Oct. 27				35	9.20	322.00			
Oct. 31				20	9.15	183.00			

- A. 9
- B. 10
- C. 11
- D. 12

31. Using LIFO (last in/first out) method of inventory valuation, what is the Unit Cost of merchandise in inventory after October 31?

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost
Sept. 1							25	\$6.10	\$152.50
Sept. 8	75	\$6.20	\$465.00						
Sept. 20				45	\$9.00	\$405.00			
Sept. 30				35	9.00	315.00			
Oct. 8				5	9.10	45.50			
Oct. 10	50	6.10	305.00						
Oct. 27				35	9.20	322.00			
Oct. 31				20	9.15	183.00			

- A. \$9.00
- B. \$6.20
- C. \$6.10
- D. \$9.15

32. Using LIFO (last in/first out) method of inventory valuation, what is the total value of inventory after October 31?

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost
Sept. 1							25	\$6.10	\$152.50
Sept. 8	75	\$6.20	\$465.00						
Sept. 20				45	\$9.00	\$405.00			
Sept. 30				35	9.00	315.00			
Oct. 8				5	9.10	45.50			
Oct. 10	50	6.10	305.00						
Oct. 27				35	9.20	322.00			
Oct. 31				20	9.15	183.00			

- A. \$61
 B. \$62
 C. \$63
 D. \$64
33. Using LIFO (last in/first out) method of inventory valuation, what is the total value of Cost of Merchandise Sold after October 31?

Date	Purchases			Cost of Merchandise Sold			Inventory		
	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost	Qty	Unit Cost	Total Cost
Sept. 1							25	\$6.10	\$152.50
Sept. 8	75	\$6.20	\$465.00						
Sept. 20				45	\$9.00	\$405.00			
Sept. 30				35	9.00	315.00			
Oct. 8				5	9.10	45.50			
Oct. 10	50	6.10	305.00						
Oct. 27				35	9.20	322.00			
Oct. 31				20	9.15	183.00			

- A. \$854.00
 B. \$861.50
 C. \$868.00
 D. \$1,270.50
34. The Dragonfly Inn had net income of \$57,520 for the year. The Dragonfly Inn's beginning and ending total assets were \$450,200 and \$410,800 respectively. Calculate the Dragonfly Inn's return on assets (ROA) for the year.
- A. 12.78%
 B. 13.36%
 C. 14.01%
 D. 8.77%

35. Calculate the total debits in the trial balance for Luke’s Diner as of December 31, 2016 (assume all accounts have normal balances).

Cash	\$8,200	Advertising Expense	\$900
Unearned Revenue	4,500	Utilities Expense	1,200
Equipment	18,000	Rent Expense	5,000
Service Revenue	16,700	Accounts Payable	2,300
Common Stock	12,800	Dividends	3,000

- A. \$36,300
 B. \$30,700
 C. \$33,300
 D. \$46,100
36. The Lima Bean reported assets of \$8,800 and equity of \$4,800. What is the Lima Bean’s debit ratio?
 A. 54.54%
 B. 45.45%
 C. 183.33%
 D. 83.33%
37. The cash account has debits totaling \$87,580 and credits totaling \$67,843. What is the balance in the cash account?
 A. \$155,423 credit
 B. \$155,423 debit
 C. \$19,737 debit
 D. \$19,737 credit
38. The Supplies account had a beginning balance of \$73. During the first quarter of 2017, \$87 of supplies were purchased. At the end of the quarter, it was determined that \$38 of supplies were still on hand. What is the amount of the adjusting journal entry for the Supplies account?
 A. \$122
 B. \$35
 C. \$49
 D. \$14
39. Retained Earnings of Huntzberger Inc. had a balance of \$8,550 at the end of the year prior to closing entries. If Net Income for Huntzberger Inc. was \$13,428 and \$2,500 in dividends were declared and paid, what is the ending balance in Retained Earnings after closing entries are posted?
 A. \$24, 478
 B. \$21,978
 C. \$7,378
 D. \$19,478

40. Danes Hardware has Cash of \$700, Inventory of \$840, Supplies of \$420, Prepaid Insurance of \$3,000, and Equipment of \$16,000. Danes has Accounts Payable of \$800, Salaries Payable of \$250, and a 30-year mortgage of \$48,000. What is Danes' current ratio?
- A. 4.05
 - B. 19.30
 - C. 4.72
 - D. 12.50
41. Chilton Mfg. purchased materials on account from Stars Hollow Inc. for \$4,800 on December 10. Stars Hollow offered Chilton credit terms of 2/10, n/30. If Chilton pays Stars Hollow on December 18th, how much does Chilton owe?
- A. \$4,800
 - B. \$4,320
 - C. \$4,704
 - D. \$3,360

42. Bartlett Co. has the following selected accounts as of December 31st.

Administrative Expenses	\$8,000	Cost of Goods Sold	\$85,000
Interest Revenue	2,000	Sales Discounts	2,500
Sales Returns & Allowances	5,500	Sales Revenue	120,000
Selling Expenses	9,000		

What is Bartlett's Net Sales Revenue?

- A. \$120,000
 - B. \$112,000
 - C. \$114,000
 - D. \$111,000
43. Bartlett Co. has the following selected accounts as of December 31st.

Administrative Expenses	\$8,000	Cost of Goods Sold	\$85,000
Interest Revenue	2,000	Sales Discounts	2,500
Sales Returns & Allowances	5,500	Sales Revenue	120,000
Selling Expenses	9,000		

What is Bartlett's Gross Profit?

- A. \$27,000
- B. \$26,000
- C. \$35,000
- D. \$29,000

44. Bartlett Co. has the following selected accounts as of December 31st.

Administrative Expenses	\$8,000	Cost of Goods Sold	\$85,000
Interest Revenue	2,000	Sales Discounts	2,500
Sales Returns & Allowances	5,500	Sales Revenue	120,000
Selling Expenses	9,000		

What is Bartlett's Gross Profit Percentage?

- A. 22.50%
 - B. 29.17%
 - C. 70.83%
 - D. 24.11%
45. Lyman's Lemons had the following financial data on their comparative financial statements.

	December 31, 2015	December 31, 2016
Cost of Goods Sold	\$476,000	\$484,000
Merchandise Inventory	97,600	103,400

Calculate the Inventory Turnover Ratio for the year 2016.

- A. 4.60
 - B. 4.68
 - C. 4.82
 - D. 4.17
46. Lyman's Lemons had the following financial data on their comparative financial statements.

	December 31, 2015	December 31, 2016
Cost of Goods Sold	\$476,000	\$484,000
Merchandise Inventory	97,600	103,400

Calculate the Days' Sales in Inventory for the year 2016.

- A. 86.33
 - B. 75.73
 - C. 77.99
 - D. 79.35
47. Petty cash has an initial balance of \$100. There are currently petty cash tickets totaling \$76 and there is \$20 in the petty cash envelope. Is petty cash over or short and by how much?
- A. Short \$4
 - B. Over \$4
 - C. Short \$24
 - D. Over \$24

48. Cregg Co. estimates bad debts using the percent of sales method. Sales for the year were \$2,100,000 and the Allowance for Bad Debts account has a credit balance of \$3,800. Cregg estimates bad debts to be 2% of sales. What is the amount of bad debt expense that Cregg will record for the year?
- A. \$45,800
 - B. \$38,200
 - C. \$41,924
 - D. \$42,000
49. Cregg Co. estimates bad debts using the percent of sales method. Sales for the year were \$2,100,000 and the Allowance for Bad Debts account has a credit balance of \$3,800. Cregg estimates bad debts to be 2% of sales. What will be the balance in the Allowance for Bad Debt account at the end of the year?
- A. \$49,600
 - B. \$42,000
 - C. \$38,120
 - D. \$45,800
50. Dule's Hillside has a balance of \$46,440 in Accounts Receivable. The balance in Allowance for Bad Debts is \$3,215 after adjustment. What is the net realizable value of Accounts Receivable?
- A. \$43,225
 - B. \$49,655
 - C. \$48,048
 - D. \$46,440