Dawson College: Business Mathematics: 201–801–DW: Winter 2008

Assignment 2

Name_____

Student ID_____

Questions 1–15 are worth one mark each, while questions 16–42 are worth two (one mark for the correct answer and one mark for the formula used to find the answer). If more space is required to show the formula please attach papers to the assignment. The assignment must be done individually.

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

1) Express in logarithmic form: $3^9 = 19683$

1) _____

2) Express in logarithmic form: $10^{-4} = 0.0001$

2) _____

3) Express in logarithmic form: $e^{-3x} = 12$

3) _____

4) Evaluate: $\ln 60$

4) _____

5) Evaluate: $\ln[400(1.17^7)]$

5) _____

6) Set up a ratio to represent the following:
10 quarters to 12 dimes to 16 nickels

6) _____

7) Set up a ratio to represent the following:
one–half of an hour to 18 minutes

7) _____

8) Solve: $n{:}6 = 24{:}42$

8) _____

9) Solve: $7{:}5 = x{:}40$

9) _____

10) Solve: $4.2{:}x = 4.375{:}25.6$

10) _____

11) Solve: $\dfrac{3}{4}{:}t = \dfrac{5}{16}{:}\dfrac{4}{9}$

11) _____

12) Solve: $\dfrac{16}{7}{:}\dfrac{7}{9} = \dfrac{15}{11}{:}t$

12) _____

13) $36 is what percent of $14?

13) _____

14) 165% of what amount is $370?

14) _____

15) What is $\dfrac{1}{5}$% of $12150?

15) _____

16) The cost of a unit is made up of $7.25 direct material cost, $4.75 direct labor cost, and $3.50 overhead. What is the ratio that exists between the three elements of cost?

16) _____

17) Departments A, B, and C occupy floor space of 310, 120 and 475 square meters respectively. If the total rental for the space is $38 225.00 per month, how much rent should be paid by Department B?

17) _____

18) Sean, Paul and Wallis decide to buy a propertys, agreeing to share profit in a ratio of $\frac{1}{3}:\frac{1}{4}:\frac{1}{5}$, which is in the same ratio as they spent on the property. If they end up making $20000.00, calculate how much each should receive from the sale of the property.

18) _____

19) A Clothing company has found that, based on past experience, $17.50 must be spent on labour costs for every $13.25 spent on materials. If a budget of the year 2005 is set at $231 875.00 for materials, calculate the amount that must be budgeted for labour.

19) _____

20) The community of Oakville sets a property tax rate of $25.5 per $1000 assessed valuation. What is the assessment if a tax of $554 is paid on a property?

20) _____

21) Determine the net cost of an article listed at $12050.00 less 20%, 16%, $9\frac{1}{3}$%.

21) _____

22) Overhead content in an article is 37 1/2% of total cost. How much is the overhead cost if the total cost is $72?

22) _____

23) A property was sold for 250% of what the vendors originally paid. If the vendors sold the property for $218 000, how much did they originally pay for the property?

23) _____

24) A hitch and trailer listed at $2149.00 has a net price of $1360.00. What is the rate of discount?

24) _____

25) A store advertises a discount of $54.72 on sandals. If the discount is 33.5%, for how much were the sandals sold?

25) _____

26) Kaz purchases an article with a net price of $114.54 after a discount of 17% was allowed. Calculate the list price.

26) _____

27) The net price of an article is $84.62. What is the list price if a discount of 17% was allowed?

27) _____

28) An invoice for $6200.00, dated May 28, 3/10, 1/20, n/60, was received on May 30. What payment must be made on June 5 to reduce the debt to $4760.00?

28) _____

29) What amount will reduce the amount due on an invoice of $9410.25 by $842.00 if the terms of the invoice are 5/10, n/30 and the payment was made during the discount period?

29) _____

30) Find the cost of an item that was sold for $4230.00 in order to realize a margin of 113% based on cost.

30) _____

31) A bicycle at Janice's sport shop, costing $108.50 was marked up to reflect 40% of the cost price. Calculate the selling price.

31) _____

32) What is the selling price of an item bought for $1420.00 if the markup based on selling price is 59%?

32) _____

33) A gross profit of $181.00 is made on a sale. If the gross profit is 22.5% based on the selling price, what was the cost?

33) _____

34) A merchant buys an item listed at $69.00 less 34% from a distributor. Overhead is 44% of cost and profit is 37.5% of cost. For how much should the item be retailed?

34) _____

35) An bike shop reduces the price of an bike for quick sale from $455.00 to $395.00. Compute the markdown correct to the nearest $\frac{1}{100}$ of 1%.

35) _____

36) The Camping Store buys sleeping bags for $54.10 less 12% for buying more than 50 sleeping bags. The store operates on a margin of 51% of the sale price and advertises that all merchandise is sold at a discount of 25% of the regular selling price. What is the regular selling price of the sleeping bags?

36) _____

37) A retailer paid $59.23 for a set of utensils. Overhead is 14% of the regular selling price and profit is 11% of the regular selling price. During a clearance sale, the set was sold at a markdown of 17%. What was the operating profit or loss on the sale?

37) _____

38) Compute the exact rate of discount allowed on a cordless drill that lists for $149.99 and is sold for $79.99.

38) _____

39) Mike's Suits and Accessories purchased men's shoes for $97.00 less 25.6%. The store operates at a normal gross profit of 25% of regular selling price. The owner marks all merchandise with new regular selling prices so that the store can offer a 20% discount. What is the new regular selling price?

39) _____

40) Deep Discount Electronics lists an article for $127.00 less 12.5% and 11.5%. A competitor carries the same article for $137.00 less 15.5%. What further discount (correct to the nearest 1/10 of 1%) must the competitor allow so that its net price is the same as Deep Discount's?

40) _____

41) An invoice for $4755.00, dated March 27, terms 3/10 E.O.M., was received March 29. What payment must be made on April 10 to reduce the debt to $1900.00?

41) _____

42) Home System Alarms buys wireless alarm systems for $4000.00 less 30%, 10%. Expenses are 25% of the regular selling price and the required profit is 20% of the regular selling price. All merchandise is marked with a new regular selling price so that the store can advertise a discount of 40% while still maintaining its regular markup. During the annual clearance sale, the new regular selling price of unsold items is marked down 25%. What operating profit or loss does the store make on items sold during the sale?

42) _____