Math 10 GMF Exam Review Chapters 1 & 2

Finance Unit - Chapters 1 & 2

Multiple Choice

1. Samir can type 85 words per minute. How long will it take him to type 2800 words? Round to the nearest minute.

   a. 27 minutes   b. 41 minutes   c. 33 minutes   d. 40 minutes

2. Glenda makes and sells jewellery. If it costs her $16.00 to make a necklace and she marks up the price by 160%, for how much will she sell the necklace?

   a. $49.92   b. $33.28   c. $41.60   d. $62.40

3. 1 Norwegian krone is worth $0.207 CAD. If you have 375 kroner, how many Canadian dollars can you exchange them for?

   a. $77.63   b. $85.39   c. $1630.43   d. $55.20

4. 1 Swiss franc is worth $1.05 CAD. If you have 1075 Swiss francs, how many Canadian dollars can you exchange them for?

   a. $1128.75   b. $1241.62   c. $0.98   d. $921.43

5. The bank's selling rate for Kenyan shillings is 0.017300 and the buying rate is 0.012510. How many shillings would you get for $150.00 CAD?

   a. 6.26 shillings   b. 8.65 shillings   c. 8670.52 shillings   d. 39 968.03 shillings

6. Jung receives an annual salary of $37000.00. What is his average biweekly income?

   a. $711.54   b. $1423.08   c. $770.83   d. $740.00

7. Luis works as a journeyman carpenter. His hours for one week are listed in the table below. If he works more than 35 hours in a week, he is paid time and a half for every additional hour. His regular pay is paid $16.30/hour. Calculate his earnings for the week.

Time card: Luis			
Day	**Start Time**	**End Time**	**Hours Worked**
Monday	6:00	17:00	
Tuesday	7:45	17:00	
Wednesday	7:00	17:45	
Thursday	7:00	17:45	
Friday	6:30	15:15	
Saturday	6:30	14:30	
Sunday			

   a. $1259.58   b. $1430.33   c. $1145.08   d. $1030.57

8. Leonard works at a paper mill. He earns a salary of $48975.00/year. At the end of every year, employees receive a performance evaluation. Leonard receives a bonus of $2056.95 after his evaluation for excellent job performance. What percentage of Leonard's salary was his bonus?

   a. 5.2%   b. 4.7%   c. 2.1%   d. 4.2%

9. Bayani has a gross biweekly income of $1100.00. His net biweekly income is $847.35. What percentage of his gross income goes to deductions? a. 23%   b. 30%   c. 77%   d. 15%

Short Answer

1. Many big screen TVs have an aspect ratio of 16:9. This means that for every 16 inches of width, the TV will be 9 inches high. Calculate the height of a TV that is 27 inches wide.

2. Which is a better buy: 8 ounces of cheese for $5.63 or 12 ounces of cheese for $7.87?

3. Raul is buying chicken wire that he will use to reinforce concrete in a retaining wall. He can buy a 25-ft roll for $17.72, a 50-ft roll for $39.25, or a 100-ft roll for $72.70. Which is the best buy?

4. Mireille is a home electronics installer. She is ordering speaker wire for an upcoming project. She can order 8.6 m for $31.22 or 15.2 m for $53.81. Calculate the unit price for each option. Which is the better deal?

5. The cost of a new sledge hammer is $42.99. It is on sale for $32.24. What is the discount, as a percent?

6. The cost of buying door handles at a wholesaler depends on the number you buy:

   If you buy fewer than 5 handles, they cost the regular price of $2.59.
   If you buy 6 to 10 handles, you get a discount of 6%.
   If you buy 11 to 20 handles, you get a discount of 12%.

   Calculate how much it would cost to buy 7 door handles in Saskatchewan, where PST is 5% and GST is 5%.

7. Pablo is visiting Canada from Mexico. He is renting a hotel room for 3 nights in Vancouver. The cost of the hotel room is $90.00 CAD per night. Pablo exchanges his pesos for Canadian dollars at a bank in Canada. The bank buys pesos at $0.13256 CAD and sells pesos at $0.08842 CAD. How much will the hotel cost him, in pesos?

8. Mandeep works as a personal trainer. He charges $38.00 for a 1-hour session and $53.20 for a 90-minute session. Mandeep ran the following personal-training sessions last week. Calculate his earnings for the week.

Day	1-hour sessions	90-minute sessions
Monday	1	2
Tuesday	2	0
Thursday	1	4
Friday	2	2
Saturday	5	2

9. Sarah is a pharmacy technician. She worked 38 hours one week and was paid $728.55. How much does Sarah make per hour?

10. Gustav earns a 5% commission on all sales he makes at the car dealership. He sells 4 cars for $23799.00, $29748.75, $17849.25, and $33318.60. How much does Gustav make on these sales?

11. What is Sandra's rate of commission if she earns $633.79 on $2697.00 worth of sales?

12. Gurpreet is a freelance writer. He writes an article for a magazine that pays $0.45 per word. How long was his article, in words, if he was paid $402.75?

13. Tina is a camp counsellor. She earns $600.00/week for 8 weeks in the summer. She also receives a bonus of $40.00 per customer she personally signs up. If Tina signs up 11 kids, how much will she earn that summer?

14. If Louise left a tip of $6.00 on a meal of $42.86, what percentage of tip did she leave?

15. You earn a biweekly salary of $1800.00. Your deductions are 1.73% for EI, 4.95% for CPP, 11.7% for federal taxes, and 4.3% for provincial taxes. What is your net biweekly income?

Problem

1. Three local grocery stores sell onions for the following prices:

Store A	$1.57/kg
Store B	$0.177/100 g
Store C	$0.67/454 g

Calculate the cost to purchase 1.4 kg from each store.

2. Use the following table to calculate the cost of buying 5 T-shirts, 2 pairs of shoes, and 6 pairs of jeans.

Clothing Article	Regular Price	Discount
T-Shirt	$20.00	15% off all T-shirts!
Shoes	$92.50	Buy one pair, get one half off!
Jeans	$45.00	Buy one, get one free!

3. Marie picked 6 litres of strawberries and was paid $36.36.

   a) How much is she paid for each litre of berries she picks?

   b) How much will she make if she picks 10.5 litres of strawberries?

4. Aidan is a roofing installer and he is writing a contract for a shingling a client's roof.

   Aidan would like to make $750.00 for the job. He estimates his costs to include $350.00 for the shingles and $11.50/hour for 3 workers. The job will take approximately 35 hours to complete.

   How much should Aidan charge to ensure that he will meet his earnings goal?

5. Iona sells firewood. She pays her son $16.25/cord to chop and stack the wood for delivery. She then sells the wood for $49.00/cord.

   a) How much does her son earn if he chops and stacks 23 cords of wood?

   b) How much does Iona earn when she sells 23 cords wood?

6. Vanja earns a 15% commission on all sales she makes at a health supply store. She also earns $9.95/hour.

   She sells the following in a 5-hour shift:
   • 4 bottles of multi-vitamins at $13.99 each;
   • 3 protein drinks worth a total of $17.49;
   • 6 ankle braces worth $10.49 each; and
   • 2 orthotics for $19.59 each.

   How much does Vanja earn for the day?

7. Lance is a travelling salesman. He is reimbursed for his driving at $0.41/km drives and receives a 35% commission on all his sales. If he drives 2012 km in one month and sells $6200.00 worth of merchandise, how much will he be paid?

8. Kamran is offered isolation pay for a 4-week job in northern Saskatchewan. His regular salary is $865.00/week. He can choose one of the following payment methods:
   • one lump sum of $1100.00 after he has completed the job, or
   • payments of 30% of his weekly salary added to each of his 4 paycheques while he is on the job.

   With which payment option will Kamran earn more money?

9. Use the information in Hatsuko's pay statement to answer the following questions.
   a) What is Hatsuko's gross weekly income?
   b) What is Hatsuko's gross annual income?

   c) How much does Hatsuko pay in deductions each week?
   d) What is Hatsuko's net annual income?

Employee Name: Hatsuko			
Company:	Pay Begin Date:07/15/2010	Net Pay:	
	Pay End Date:07/21/2010	Cheque Date:	

General	
Employee ID: 123123	Job Title:
Address:	Pay Rate: $560.00
	Annual:

Taxes Data	
Description	Federal
Claim Code	1

Hours and Earnings		
	Current	
Description	Rate	Gross Earnings
Regular		

Before Tax Deductions	
Description	Amount
Union Dues	N/A
Pension	N/A
Total	$0.00

Taxes	
Description	Amount
Federal	$45.92
Provincial	$20.44
CPP	$27.72
EI	$9.69
Total	

10. Hakim's gross weekly salary is $1000.00.
    a) What is his net weekly salary if he has the following deductions?

    • $49.50 for CPP
    • $17.30 for EI
    • $103.00 for federal tax
    • $65.00 for provincial tax

    b) What percentage of his gross weekly income does he take home?

    c) What is Howard's gross income?

11. Howard has a net income of $1825.00. He pays the following deductions:

    a) What is Howard's taxable income?

    b) What are Howard's federal and provincial tax rates?

Before-Tax Deductions	
Union Dues	$62.05
Taxes	
Federal	$234.68
Provincial	$87.43
CPP	113.89
EI	$39.80

Math 10 GMF Exam Review Chapters 3

1. Fred had an unpaid balance on his credit card and he was charged $3.44 when he paid off the balance after 18 days. The credit card had an interest rate of 19.5% per annum. How much was his unpaid balance? _____

2. A deposit of $1650 is invested at 3% per annum, compounded quarterly, for 5 years. How many interest periods will there be? _____

3. Jane earned $371 on an investment of $2650 that earned simple interest at a rate of 2.8%. How many years was the investment for? _____

4. A $1350 investment was made at a rate of 2.5% per annum, compounded monthly, for 4 years.
   a) How many interest periods will there be? _____
   b) How much will the investment be worth at the end of the 4 years? _____
   c) How much interest was earned? _____
   d) Would the same investment have earned the same amount of interest if it was compounded semi-annually for 4 years? Explain.

5. Jeff invested $4300 at 3.1% per annum, compounded quarterly for 6 years. Calculate the final investment value and the interest earned at the end of the 6 years.
   _____

6. Maggie is buying a Mac Book and that has following payment options. **Calculate the total cost of each option:**

Option 1: Pay cash. The $1399 plus 13% sales tax.

Option 2: Use the store's monthly payment plan of 24 monthly payments of $75 (this includes tax) plus an admi fee of $55.

Option 3: Pay the cash price using a cash advance on his credit card. She would be charged interest at

an annual rate of 18.25%, and she expects it would take her 180 days to pay her credit card balance.

Math 10 GMF Exam Review Chapters 1 & 2
Answer Section

MULTIPLE CHOICE

1.C   2. C   3. A   4.   A   5. C   6. B   7. C   8. D   9. A

SHORT ANSWER

1. Set up a proportion to solve for *x,* the height of the TV.

$$\frac{27}{x} = \frac{16}{9}$$

$$9 \times x \times \frac{27}{x} = \frac{16}{9} \times x \times 9$$

$$9 \times 27 = 16x$$

$$\frac{9 \times 27}{16} = x$$

$$15.19 = x$$

The TV will be 15.19 inches high.

2. Calculate the unit price of each option.

Cheese 1:   Cheese 2:   Cheese 2 is a better buy.

$$\frac{\$5.63}{8} = \$0.704/oz$$ $$\frac{\$7.87}{12} = \$0.656/oz$$

3. Calculate the unit price of each roll.

25-ft roll: 50-ft roll: 100-ft roll:

$$\frac{\$17.72}{25\,ft} = \$0.709/ft$$ $$\frac{\$39.25}{50\,ft} = \$0.785/ft$$ $$\frac{\$72.70}{100\,ft} = \$0.727/ft$$ The 25-ft roll is the best price.

4. Calculate the unit price for each option.

8.6-m roll: 15.2-m roll:

$$\frac{\$31.22}{8.6\,m} = \$3.63/m$$ $$\frac{\$53.81}{15.2\,m} = \$3.54/m$$ The second price is a better deal.

5. Calculate the dollar amount of the discount.
    $42.99 – $32.24 = $10.75

    Calculate what percentage $10.75 is of $42.99.
    $10.75 ÷ $42.99 × 100 = 25

    The sledge hammer has been reduced in price by 25%.

6. You will get a discount of 6% on your purchase.
    Calculate the cost before tax for 1 door handle.
    $2.59 × (1 – 0.06) = $2.43

    Calculate the cost of 7 door handles before tax.   Calculate the cost of 7 door handles after tax.
    7 × $2.43 = $17.01 $17.01 × 1.10 = $18.71

    It would cost $18.71 to buy 7 door handles.

7. Calculate the cost of the hotel in CAD.   The bank is buying the pesos from Pablo, so use the buying rate.

$90.00 \text{ CAD/night} \times 3 \text{ nights} = \$270.00$ $\$270.00 \div 0.13256 = 2037 \text{ pesos}$

The hotel will cost Pablo 2037 pesos.

8. Add Mandeep's 1-hour sessions.   Add Mandeep's 90-minute sessions.   Calculate Mandeep's earnings

$1 + 2 + 1 + 2 + 5 = 11$ $2 + 0 + 4 + 2 + 2 = 10$ $(11 \times \$38.00) + (10 + \$53.20) = \$950.00$

Mandeep will earn $950.00 for the week.

9. Divide Sarah's earnings for the week by the number of hours she worked.

$\$728.55 \div 38 = \$19.17$ Sarah earns $19.17/hour.

10. Calculate 5% of his total sales.

$0.05(\$23799.00 + \$29748.75 + \$17849.25 + \$33318.60) = \$5235.78$ Gustav earns a commission of $5235.78 on the sales.

11. Divide Sandra's commission by her sales and convert to a percentage.

$\$633.79 \div \$2697.00 = 0.235$ Sandra's rate of commission is 23.5%.

$0.235 \times 100 = 23.5$

12. Divide his total pay by the pay per word.

$\$402.75 \div \$0.45 = 895$ Gurpreet's article was 895 words long.

13. Calculate Tina's bonus.   Calculate how much Tina earns from regular pay.

$11 \times \$40.00 = \$440.00$ $8 \times \$600.00 = \$4800.00$

Add to find her total earnings.

$\$440.00 + \$4800.00 = \$5240.00$ Tina earns $5240.00 over the summer.

14. Divide the cost of the meal by the tip and convert to a percentage.

$\dfrac{\$6.00}{\$42.86} \times 100 = 14$ Louise left a tip of 14%.

15. Find the sum of your deductions.

$1.73\% + 4.95\% + 11.7\% + 4.3\% = 22.68\%$ Your deductions total 22.68%.

Subtract 22.68% from 100% to calculate what portion of your wages you keep.

$100\% - 22.68\% = 77.32\%$

Find 77.32% of your salary.

$0.7732 \times \$1800.00 = \$1391.76$

Your net biweekly income is $1391.76.

PROBLEM

1. Calculate the cost to purchase 1.4 kg at each store.

   Store A: Store B:

   $1.4 \times \$1.57 = \$2.20$ $1.4\,kg \times 1000\,g\,per\,kg = 1400\,g$

                                                      $1400\,g \div 100\,g \times \$0.177 = \$2.48$

   Buying 1.4 kg of onions at Store A costs $2.20.   Buying 1.4 kg of onions at Store B costs $2.48.

   Store C:
   $1.4\,kg \times 1000\,g\,per\,kg = 1400\,g$

   $1400\,g \div 454\,g \times \$0.67 = \$2.07$

   Buying 1.4 kg of onions at Store C costs $2.07.

2. Calculate the sale price of each item.

   1 T-shirt: 1 pair of shoes (but you must buy multiples of 2):

   $\$20.00 \times (1 - 0.15) = \$17.00$ $\frac{1}{2}\left(\$92.50 + \frac{1}{2}\$92.50\right) = \$69.38$

   1 pair of jeans (but you must buy multiples of 2):
   $\frac{1}{2}\left(\$45.00 + 0 \times \$45.00\right) = \$22.50$

   Total cost = 5($17.00) + 2($69.38) + 6($22.50) = $358.75   The total bill comes to $358.75.

3. a) Calculate Marie's pay per litre of strawberries picked.   b) Multiply Marie's pay per litre by the number of litres picked.
      $10.5 \times \$6.06 = \$63.63$ $\$36.36 \div 6 = \$6.06$

   Marie will earn $63.63 for picking 10.5 L of strawberries.   Marie is paid $6.06/L of strawberries she picks.

4. Calculate how much Aidan will pay the workers.
   $3\,workers \times \$11.50/hour \times 35\,hours = \$1207.50$

   Calculate Aidan's total expenses.
   expenses = shingles + pay for workers
   expenses = $350.00 + $1207.50
   expenses = $1557.50

   The value of the contract will be the expenses plus Aidan's earnings.
   contract = $1557.50 + $750.00
   contract = $2307.50

   Aidan should charge $2307.50 to meet his earnings goal.

5. a) $\$16.25 \times 23 = \$373.75$

      Iona's son earns $373.75 for chopping and stacking 23 cords of wood.

   b) Calculate Iona's earnings per cord of wood.

      earnings = sale price – son's wage
      earnings = $49.00 – $16.25
      earnings = $32.75

      $\$32.75 \times 23 = \$753.25$ Iona earns $753.25 when she sells the wood.

6. Calculate the total of Vanja's sales for the day.
    total sales = multi-vitamins + protein drinks + ankle braces + orthotics
    total sales = 4($13.99) +3($17.49) + 6($10.49) + 2($19.59)
    total sales = $210.55

    Calculate the commission on Vanja's sales.
    $0.15 \times \$210.55 = \$31.58$

    Calculate Vanja's wages for the day.
    $\$9.95 \times 5 = \$49.75$

    Add to find Vanja's total earnings.
    total earnings = commission + wages
    total earnings = $31.58 + $49.75
    total earnings = $81.33

    Vanja earned $81.33 for the day.

7. Calculate how much he will be reimbursed for his driving.
    $\$0.41 \times 2012 = \$824.92$

    Calculate his commission.
    $0.35 \times \$6200.00 = \$2170.00$

    Add to calculate his total payment.
    $824.92 + $2170.00 = $2994.92

    Lance will be paid $2994.92.

8. Calculate 30% of Kamran's weekly salary.
    $\$865.00 \times 0.30 = \$259.50$

    Multiply by 4 to calculate how much isolation pay Kamran would earn in total with payment option 2.
    $\$259.50 \times 4 = \$1038.00$

    With payment option 2, Kamran will earn a total of $1038.00 in isolation pay. He would earn more money if he took the lump sum of $1100.00 at the end of the job.

9. a) Hatsuko's gross weekly income is indicated on her paycheque.

    | Pay Rate: $560.00 |

    She earns a gross weekly income of $560.00.

    b) Multiply her gross weekly income by 52.
    $\$560.00 \times 52 = \$29120.00$

    Hatsuko's gross annual income is $29120.00.

    c) Add Hatsuko's deductions for federal tax, provincial tax, CPP, and EI.
    $45.92 + $20.44 + $27.72 + $9.69 = $103.77

    Hatsuko pays $103.77 in deductions each week.

    d) Calculate Hatsuko's net weekly pay and multiply by 52.
    $\text{net annual income} = (\text{gross weekly pay} - \text{deductions}) \times 52$

    $\text{net annual income} = (\$560.00 - \$103.77) \times 52$

    $\text{net annual income} = \$23724.06$

    Hatsuko's net annual income is $23724.06.

10. a) Subtract Hakim's deductions from his gross weekly salary.
net weekly salary = gross salary – CPP – EI – federal tax – provincial tax
net weekly salary = $1000.00 – $49.50 – $17.30 – $103.00 – $65.00
net weekly salary = $765.20

Hakim's net weekly salary is $765.20.

b) Calculate what percentage $765.20 is of $1000.00.

$$\frac{\$765.20}{\$1000.00} \times 100 = 76.52$$

Hakim takes home 76.52% of his gross weekly income.

11. a) Calculate Howard's taxable income by adding his deductions for federal tax, provincial tax, CPP, and EI to his net income.
$1825.00 + $234.68 + _$87.43 + _$113.89 + _$39.80 = $2300.81

Howard's taxable income is $2300.81.

b) Calculate what percentage Howard's federal tax payment is of his taxable income.

$$\frac{\$234.68}{\$2300.81} \times 100 = 10.2$$

Howard's federal tax rate is 10.2%.

Calculate what percentage his provincial tax payment is of his taxable income.

$$\frac{\$87.43}{\$2300.81} \times 100 = 3.8$$

Howard's provincial tax rate is 3.8%.

c) Add Howard's union dues payment to his taxable income.
$2300.81 + $62.05 = $2362.86

Howard's gross income is $2362.86.

Chapter 3 Solutions:

1. Fred had an unpaid balance on his credit card and he was charged $3.44 when he paid off the balance after 18 days. The credit card had an interest rate of 19.5% per annum. How much was his unpaid balance?   **$357.72**

2. A deposit of $1650 is invested at 3% per annum, compounded quarterly, for 5 years. How many interest periods will there be?   **20 interest periods**

3. Jane earned $371 on an investment of $2650 that earned simple interest at a rate of 2.8%. How many years was the investment for?

                                                              5 years

4. A $1350 investment was made at a rate of 2.5% per annum, compounded monthly, for 4 years.
    e) How many interest periods will there be? **48**
    f) How much will the investment be worth at the end of the 4 years? **$1491.83**
    g) How much interest was earned? **$141.83**
    h) Would the same investment have earned the same amount of interest if it was compounded semi-annually for 4 years? Explain. **No it will not be worth the same as interest will not be calculated as often – Final amount would be $1491.06 (very close thought!!).**

5. Jeff invested $4300 at 3.1% per annum, compounded quarterly for 6 years. Calculate the final investment value and the interest earned at the end of the 6 years.

**$5175.30,
$875.30**

6. Maggie is buying a Mac Book and that has following payment options.

Calculate the total cost of each option.

Option 1: Pay cash. The $1399 plus 13% sales tax. **$1580.87**

Option 2: Use the store's monthly payment plan of 24 monthly payments of $75 (this includes tax)

plus an administration fee of $55. **$1855**

Option 3: Pay the cash price using a cash advance on his credit card. She would be charged interest at

an annual rate of 18.25%, and she expects it would take her 180 days to pay her credit card balance.

$1723.15