**Math 10 Essentials Review**

**Unit 1: Working and Earning**

1. Complete the table. SHOW YOUR WORK FOR FULL POINT VALUE! (9 pts)

|  |  |  |  |
| --- | --- | --- | --- |
|  | Annual Salary | Monthly Salary | Weekly Salary |
| Sam | $72,000 |  |  |
| Ethan |  |  | $850.00 |
| Drew |  | $15 72.00 |  |

1. A) Julie gets a summer job delivering flyers. She gets paid $0.50 per flyer she delivers. Julie also gets a base rate of $50 per day. On Thursday, Julie delivered 150 flyers. How much money did Julie earn? (3 pt)

Julie earned \_\_\_\_\_\_\_\_\_\_ last Thursday.

b) If Julie works 5 days a week and delivers the same amount of flyers every day, she would earn the same amount each day. What would her weekly pay be? (2 pt)

3. Julian clears tables and the Millstone Pub. She is paid $10.75 per hour. He earns time and a half for any work over 35 hours. One week he worked for 37 hours. Calculate Julian’s total earnings for the week. (9 pts)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Reg.  Hours | Reg.  Rate | Reg. earnings | Overtime  hours | Overtime rate | Overtime  earnings | Total  Earnings |
|  | $10.75 |  |  |  |  |  |

4. Stuart works at Pro Hockey Life. He earns a salary of $350 a week, plus 5% commission. His first week, Stuart sold $3300 worth of merchandise. What were his total earnings for that week? (4 pts)

1. Tim builds wheelbarrows. One day he builds 70 chairs and is paid $3.50 per chair.

a) What are his earnings?

b) If he builds 70 chairs for 30 straight workdays, what are his earnings during this time?

c) Tim works 150 days a year. If he makes the same number of chairs each day, how much will he earn in a year?

**Unit 2 Deductions and Expenses**

1. Jared is a member of a government employees union. His annual union dues are $395. The dues are spread out evenly over all 26 of his weekly pays, so that the same amount comes off of each paycheck. How much is deducted off of each paycheck for Union Dues? (2pts.)

2. Avery’s gross pay is $1021 semi-monthly (two times per month, on the 1st and 15th). Here are her deductions that are taken off of each pay cheque:

EI $9.34 CPP $13.97 Income Tax $70.80

RRSP $23.60 Union Dues $12.31

|  |  |  |
| --- | --- | --- |
| a) What are Avery’s total deductions this week? (2pts.) | b) What is Avery’s net pay for one pay check? (2pts.) | c) What is her gross pay per month? (2pts.) |

Here are Avery’s expenses for one month:

|  |  |  |
| --- | --- | --- |
| **Expense** | **$$** | **Date** |
| Groceries | $60 | November 5 |
| Credit card payment | $477 | November 12 |
| Groceries | $60 | November 12 |
| Car payment | $238 | November 14 |
| Cable | $44 | November 14 |
| Groceries | $60 | November 19 |
| Car insurance | $125 | November 20 |
| Phone | $36 | November 23 |
| Groceries | $60 | November 27 |
| Rent, including utilities | $550 | November 31 |

d) What is the total expenses for the month? (2pts.)

e) How much will she have left over at the end of the month? (2pts.)

f) Assume Avery had no starting balance from the previous month. Does she have enough money from her first pay to cover all expenses due before her second pay? (2pts.)

g) What percent of Avery’s monthly take-home pay are her monthly expenses? (2pts.)

4. Change the following percentages and fractions into decimal numbers (0.5 pts each)

|  |  |  |  |
| --- | --- | --- | --- |
| Percent | Decimal Number | Fraction | Decimal Number |
| 15% |  |  |  |
| 3% |  |  |  |
| 20% |  |  |  |
| 100% |  |  |  |
| 123% |  |  |  |

6. Jake earns $475 per week. What is Jake’s monthly gross income? (2pts.)

7. Bob has a job as a furniture salesperson. The chart below outlines his current finances.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Income and Deductions:** | |  | **Expenses: $ amount per month** | |
| A monthly salary of $1050 | |  | Rent, including utilities | $550.00 |
| 3% commission on sales | |  | Phone | $32.00 |
| An average of $10000 in sales a month | |  | Groceries | $180.00 |
| No benefits | |  | Credit card payment | $250.00 |
| Deductions | Income tax $157.20  EI $30.26  CPP $46.48 |  | Bus Pass | $38.00 |

8. His credit card payment covers purchases of clothes, gifts, and household items.

Bob would like to buy a used car. Assess his situation and explain why he can or cannot afford to own and operate a used car if the approximate costs for owning that car are $400 per month, including payment, insurance, fuel and maintenance. Show and label all your work! (12 pts)

|  |  |  |
| --- | --- | --- |
| 1. Gross income: | 3. Net income: | 5. Amount left after expenses: |
| 2. Deductions: | 4. Expenses: | 6.Can she afford the car?  Why or why not? |

**Unit 3 Paying Taxes**

1. Use the words in the boxes to fill in the blanks below. /5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Income tax | Provincial sales tax (PST) | Federal sales tax (GST) | Indirect tax | Direct tax |

\_\_\_\_\_\_\_\_\_\_\_ Sales tax that is charged by each province on some goods and some services.

\_\_\_\_\_\_\_\_\_\_\_ A tax that is already included in the price.

\_\_\_\_\_\_\_\_\_\_\_ Tax that is deducted from each pay cheque.

\_\_\_\_\_\_\_\_\_\_\_ Sales tax that is charged by the federal government on some goods and most services.

\_\_\_\_\_\_\_\_\_\_\_\_A tax that is added at the cash register when you pay for your purchase.

1. Give two examples of each, direct and indirect sales tax.

Direct: 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Indirect: 1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Name 3 services that are paid for by money collected from taxes (Provincial and/or Federal).
2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Each purchase is subject to both PST and GST. Complete the tables. Show all work.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Price | PST | GST | Total cost |
| iPhone 6 | $575 |  |  |  |
| Jeans | $82.95 |  |  |  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Item | Price | PST | GST | Total cost |
| xbox | $379.75 |  |  |  |
| Guitar Hero | $154.25 |  |  |  |

8. How much is the 10% jewellery tax on a necklace with a wholesale price of $315?

11. The **labour portion** of Jordan’s furnace repair bill is **$74.59**. The **cost of parts is $36.59**. This **labour** is subject to **GST only**. The **parts** are subject to **PST and GST**. Do all calculations to determine total cost and determine if $150 is enough to pay Jordan’s bill. **Show work and make answers clear.**

**Unit 4 Making Purchases**

1. What change would you give the following customers? Calculate the amount and the specific coins to give the fewest coins in change. /8

|  |  |  |  |
| --- | --- | --- | --- |
| Purchase | Amount tendered | Change | Coins (fewest) |
| $6.24 | $6.50 |  |  |
| $1.35 | $5.00 |  |  |
| $37.48 | $40.00 |  |  |

1. Calculate the following: /5

|  |  |  |  |
| --- | --- | --- | --- |
| 10% of 20 | 5% of 20 | as a percent | 8 items at $3.56 each. |

**Unit 5 Buying Decisions**

1. Give an estimate for the numbers below. Round numbers so that they would be easy to work with and have only one number that is not a zero. /2

|  |  |  |  |
| --- | --- | --- | --- |
| $47.95 |  | $7.88 |  |

1. A brand of cheese is sold in 230g packages for $2.89 and 500g packages for $5.19.
2. Calculate the unit price per gram for each package size.
3. Calculate the unit price per 100 g for each package size.
4. Which package has the lower unit price?
5. What other considerations should be taken into account before selecting the package size?
6. Yoga passes at a Toronto yoga studio are sold for $18 each for a single class, 10 class pass for $130, a one month unlimited pass for $140, or a monthly unlimited for $85/month as long as you sign up for at least 4 months. Ms. MacDonald is going to be in Toronto for two weeks and plans to go to yoga 10 times while she is there.
7. How much would it cost to buy 10 individual passes?
8. How much would she save by buying the 10 class pass instead of paying for the individual classes?
9. Why might Ms. MacDonald decide to buy an individual pass or passes to start?
10. Fill in the chart to show unit prices per class for each of the following:

|  |  |  |
| --- | --- | --- |
|  | Show work! | Unit price per class |
| 10 class pass |  |  |
| One month unlimited if you went two times per week (assume a 4 week month) |  |  |
| A monthly unlimited if you went 2 times per week (assume a 4 week month) |  |  |
| A monthly unlimited for $85/month as long as you sign up for at least 4 months if you went 2 times per week (assume a 4 week month) |  |  |

1. Describe two different incentives that stores use to encourage shopping at their stores. /2
2. Calculate prices in Canadian dollars for the following amounts in US dollars. Use the conversion factor: $1.00=$1.545 Cdn.

|  |  |  |
| --- | --- | --- |
| $32.99 USD | $159.69 USD | $76.48 USD |
|  |  |  |

1. If you bought $515 US worth of goods, you would need to convert that amount to Canadian Dollars before you cross back into Canada. Use the conversion factor shown and show the conversion calculation here:

|  |
| --- |
| **1 US dollar = 1.017 Canadian Dollars (as of October 12, 2011)** |

1. Do calculations to decide in which country it would be cheaper for you to buy an apple watch. An apple watch online in Canadian dollars is $699 and in US online it is $549. Use the conversion factor of $1.00=$1.33 Cdn. State clearly which is a better price in Canadian dollars and by how much.

**Unit 6: Banking Transactions and Saving Money**

1. Calculate the simple interest and total amount at end of term for each. (I=Prt and A=P+I)

1. $2500 deposited at 4% per annum for 5 years.
2. $154 000 deposited at 8% per annum for 18 months.

1. What is the difference between simple and compound interest?

**Unit 7 Probability**

1. Emily is deciding to buy a lottery ticket sold by a charitable organization or to make a donation. To determine the risks and rewards, she inquires about buying a ticket versus making a donation and she learns the following.

Each ticket costs $100

100 000 tickets are sold

There are 50 value prizes to be won

Of the $100 $25 goes to charity and the rest goes to pay for prizes

1. What is the theoretical probability of buying a winning ticket?

2. You filp a coin 10 times. Of that 10 times the coin landed on heads.

a) What is the experimental probability of getting heads?

b) Is this different than the theoretical probability?

**Unit 8 Measuring and Estimating**

1. What metric units would you use to measure the following?

1. The length of a cat?
2. The thickness of a quarter?
3. The height of a tree?
4. The distance from Halifax NS to Montreal QC?

2. Complete the following by multiplying or dividing by the appropriate power of 10. /2

|  |  |  |
| --- | --- | --- |
|  | X or ÷ by 10, 100, or 1000 |  |
| 5 m |  | \_\_\_\_\_\_\_ cm |
| 900cm |  | \_\_\_\_\_\_\_ m |

**Unit 9 Transformation and Design**

1. Place the correct geometric transformation in the boxes beside each definition.

|  |  |  |  |
| --- | --- | --- | --- |
| Translation | Rotation | Reflection | Dilatation |

|  |  |
| --- | --- |
|  | This transformation has the effect of creating a mirror image of the object about a line. The line is a line of symmetry. The image is the same size and shape, but has the opposite orientation as the original. |
|  | This transformation has the effect of sliding an object horizontally and/or vertically. The image is the same size and shape, and has the same orientation as the original. |
|  | This transformation has the effect of enlarging or reducing an object. The image is the same shape and has the same orientation, but is not the same size as the original. |
|  | This transformation has the effect of moving an object in a circular motion about a point. The point is the centre for turn symmetry. The image is the same size and shape, but has a different orientation than the original. |

**Unit 10 Buying a Car**

Calculate the total purchase price for a car with the following costs:

|  |  |  |
| --- | --- | --- |
|  | Sum of 1st 6 items: | Total cost: |
| $24 000 base price |  |  |
| $620 pre-delivery expense |
| $305 freight |
| $100 federal consumption tax |
| $ 75 fuel consumption tax |
| $95 admin fee |
|  | Calculate the sales tax: |
| 15% sales tax on the above items |  |
|  | Sum of last 2 items: |
| $20 license fee |  |
| $ 70 gas |

21. Calculate the total amount to be paid before driving a leased car off the lot if you have to pay $1000 down payment, $300 refundable security deposit, $275 first monthly payment.