Hwk - FINANCE

1. Reminders on percentages :

a) Write the following percentages in decimal form :

23% = 0.23

7% = 0.07

3,8% = 0.038

0,5% = 0.005

b) Calculate the percentages of the following quantities:

25% de 2000 : $0.25 \times 2000 = 500$

3% de 700 : $0.03 \times 700 = 21$

12,5% de 80000 : $0.125 \times 80000 = 10000$

c) Increase of decrease the following values by the given percentages:

Increase 3000 by 15% : $1.15 \times 3000 = 3450$

Decrease 3000 by 15% : $0.85 \times 3000 = 2550$

Increase 2500 by 6,3% : $1.063 \times 2500 = 2657.5$

Decrease 2500 by 6,3% : $0.937 \times 2500 = 2342.5$

2. Net and Gross revenue :

a) What is the difference between gross and net revenue ?

Gross Revenue : what we would earn if we didn't have any deduction or tax

Net Revenue : what we actually earn (what we can spend)

b) What is the difference between a semi-monthly salary and a salary paid every 2 weeks ?

- semi_monthly : twice a month (every 15 days most months)
- every 2 weeks : every 14 days (this could happen 3 times in a month)

c) Geri has a base salary of 900$ per month, plus a commission of 7% of her sales. Last month, she sold for 26324$. What was her gross salary?

Commission : $0.07 \times 26324 = \$1842.68$

Gross salary : $900 + 1842.68 = \boxed{\$2742.68}$

d) Caroline was hired to make ~~flour~~ flower bouquets. She is paid 2,50$ for each bouquet or 12$/hour. Caroline estimates that she can make 4 bouquets every hour. Which method of payment is more advantageous?

Pay per bouquet : $4 \times 2.50 = \$10/\text{hour}$

It is better to be paid $12/hour

e) Joe worked 46h last week. He was paid 11,50$/hour and double for supplementary hours. Normally, he only works 40h/week. What was his gross salary that week?

$40 \times 11.50 + 6 \times 11.50 \times 2 = \boxed{\$598}$

f) Jules works in a restaurant 27h per week. He is paid 10,50$/hour and receives 134$ in tips every week. What is his gross salary each week?

$10.50 \times 27 + 134 = \boxed{\$417.5}$

g) Jack is paid by commission. He gets 12% of sales. Last week the sales were 5675$. What was his gross salary that week?

$0.12 \times 5675 = \boxed{\$681}$ for the week

h) Marlene works in an electronics store. She gains 3% of commissions for the first 15000$ of sales, plus 5% on the sales over 15000$. Last week, she did $32150 on sales. What is her gross salary?

$0.03 \times 15000 + 0.05(32150 - 15000) = \boxed{\$1307.50}$

i) Frank is a salesman. He is paid 1800$ per month and expects to have 25000$ in sales. He is paid 8% of commissions. Last month, he made 36740$ in sales. What is his gross salary?

$1800 + 0.08 \times (36740 - 25000) = \boxed{\$2739.20}$

j) Julia is a waitress. She is paid 10,45$/hour and keeps 70% of the tips that she receives. The rest is shared between the receptionist and the chefs. Julia worked 34h last week and received 254$ in tips. What was her gross salary?

$10.45 \times 34 + 0.7 \times 254 = \boxed{\$533.10}$

k) Antoine accepted an offer to work in a clothing boutique. His employer offered him 900$ plus 6% of monthly sales or a commission of 9% of the monthly sales. Which offer should Antoine take?

x : amount of sales per month.

Revenue with 1st option: $900 + 0.06x$

Revenue with 2nd option: $0.09x$

$$900 + 0.06x = 0.09x$$
$$900 = 0.03x$$
$$x = \frac{900}{0.03}$$
$$x = 30000$$

If Antoine sells more than \$30000 of clothes, it is better to take option 2, but it's more risky (no guaranteed income)

l) Pauline earns 9.50$ per hour plus a supplementary salary for all extra hours. A normal work week is 40h. Last week, she worked for 51heures and her gross salary was 641,25$. What is her supplementary salary when working extra hours ?

x : salary for 1 extra hour

$9.50 \times 40 + 11x = 641.25$

$11x = 641.25 - 380$

$11x = 261.25$

$x = 23.75$

Each extra hour is paid \$23.75

3. Deductions :

- EI and CPP :

a) Calculate CPP for a monthly gross salary of 1160$.

Annual Gross Revenue : $12 \times 1160 = \$13920$

$(13920 - 3500) \times 0.051 = \$531.42$ for the year

$531.42 \div 12 =$ **$44.29 per month**

b) Calculate EI for a monthly gross salary of 1130,45$.

Annual Gross Revenue: $12 \times 1130.45 = \$13565.40$

$13565.40 \times 0.0162 = \$219.76$ for the year

$219.76 \div 12 =$ **$18.31 per month**

c) Calculate CPP for a semi-monthly gross salary of 1117,35$.

Annual Gross Revenue : $24 \times 1117.35 = \$26816.40$

$(26816.40 - 3500) \times 0.051 = \$1189.14$

$1189.14 \div 24 =$ **$49.55 twice a month**

d) Calculate the EI for a semi-monthly gross salary of 1165,32$.

Annual Gross Revenue: $24 \times 1165.32 = \$27967.68$

$27967.68 \times 0.0162 = \$453.08$

$453.08 \div 24 =$ **$18.88**

e) Calculate the CPP and the EI deductions for each gross salary :

i- 248,08$ weekly Annual Gross Revenue : $52 \times 248.08 = \$12900.16$

CPP : $(12900.16 - 3500) \times 0.051 = \$479.41 \rightarrow (\div 52) \Rightarrow$ **$9.22**

EI : $12900.16 \times 0.0162 = \$208.98 \rightarrow (\div 52) \Rightarrow$ **$4.02**

ii- 1076,92 each two weeks Annual Gross Revenue : $26 \times 1076.92 = \$27999.92$

CPP : $(27999.92 - 3500) \times 0.051 = \$1249.50 \xrightarrow{\div 26}$ **$48.06**

EI : $27999.92 \times 0.0162 = \$453.60 \xrightarrow{\div 26}$ **$17.45**

iii- 2833,33$ semi-monthly

Annual Gross Revenue: $24 \times 2833.33 = \$67999.92$

CPP: $\$2748.90$ (max) $\xrightarrow{\div 24}$ $\boxed{\$114.54}$

EI: $\$860.22$ (max) $\xrightarrow{\div 24}$ $\boxed{\$35.84}$

iv- 3634,62 monthly

Annual Gross Revenue: $12 \times 3634.62 = \$43615.44$

CPP: $(43615.44 - 3500) \times 0.051 = \$2045.89 \xrightarrow{\div 12}$ $\boxed{\$170.49}$

EI: $43615.44 \times 0.0162 = \$706.57 \xrightarrow{\div 12}$ $\boxed{\$58.88}$

f) Libby places bikes in their racks at a bike store. She earns 80$ per week, plus 6$ for each bike she places. She also earns a bonus of 25$ when she works during a holiday. She is paid every 2 weeks.

i) what is her salary after she stacks 74 bikes and works for one holiday ?

$80 \times 2 + 6 \times 74 + 25 = \$629$ for 2 weeks

ii) What are the deductions in EI and CPP for the same period of time if the salary she gains is the least amount that she can get over the two weeks?

Annual Gross Revenue: $26 \times 629 = \$16354$

CPP: $(16354 - 3500) \times 0.051 = \$655.55 \xrightarrow{\div 26}$ $\boxed{\$25.21}$

EI: $16354 \times 0.0162 = \$264.93 \xrightarrow{\div 26}$ $\boxed{\$10.19}$

g) Helene pays her employees every week. She offers a base salary of 160$ plus 4% in commissions on sales that surpass 2000$. If an employee sells 7500$ each week, what is there salary after EI and CPP deductions?

Annual Gross Revenue: $(160 + 0.04 \times 5500) \times 52 = \$19760$

CPP: $(19760 - 3500) \times 0.051 = \$829.26 \xrightarrow{\div 52}$ $\boxed{\$15.95}$

EI: $19760 \times 0.0162 = \$320.11 \xrightarrow{\div 52}$ $\boxed{\$6.16}$

Revenue after deductions: $19760 - 15.95 - 6.16 =$ $\boxed{\$357.89}$

4. taxable Salary, Federal and Territorial Taxes:

h) Séverine earns $1000 gross per week, but pays $5.50 in union fees and $90 to her pension plan RRSP. What is her taxable revenue (federal and territorial)?

- Annual gross revenue: $1000 \times 52 = \$52000$
- CPP: $(52000 - 3500) \times 0.051 = \$2473.50$
- EI: $52000 \times 0.0162 = \$842.4$
- Other deductions before taxes: $(5.5 + 90) \times 52 = \$4966$

Federal taxable revenue: $52000 - 2473.50 - 842.4 - 4966 - 11635$
$= \boxed{\$32083.1}$

Territorial taxable revenue $= 52000 - 2473.50 - 842.4 - 4966 - 10207 = \boxed{\$33511.10}$

j) Thibaut lives in Yukon. He gains $2500 semi-monthly. He pays $12.50 in union fees and $150 in contribution to a health care plan.

- What is his federal taxes at each payment?

- Annual gross revenue: $2500 \times 24 = \$60000$
- CPP: $\$2748.90$ (max)
- EI: $\$860.22$ (max)
- Other deductions: $(12.50 + 150) \times 24 = \$3900$
- Federal taxable revenue: $60000 - 2748.90 - 860.22 - 3900 - 11635$
$= \$40855.88$

F-Taxes: $40855.88 \times 0.15 = \$6128.38 \rightarrow$ each period $\boxed{\$255.35}$

- What are his territorial taxes at each payment?

- Territorial taxable revenue:

$60000 - 2748.90 - 860.22 - 3900 - 10207 = \$42283.88$

Territorial taxes: $42283.88 \times 0.064 = \$2706.17$

each period: $\boxed{\$112.76}$

l) What are his federal and provincial taxes for his taxable revenue of $1156 (without the personal exemptions) each two weeks in BC.

- Federal taxable revenue: $\$1156 \times 26 - 11635 = \$18421$

  Federal taxes: $18421 \times 0.15 = \$2763.15 \xrightarrow{\text{each 2 weeks}} \boxed{\$106.28}$

- Provincial taxable revenue: $\$1156 \times 26 - 10207 = \$19849$

  Provincial taxes: $19849 \times 0.0506 = \$1004.36 \xrightarrow{\text{each 2 weeks}} \boxed{\$38.63}$

m) Determine the federal and provincial taxes for a monthly taxable revenue (without the personal exemptions) of $6286 in BC.

- Federal taxable revenue: $6286 \times 12 - 11635 = \$63797$

  Federal taxes: $47630 \times 0.15 + 16167 \times 0.205 = \boxed{\$10458.74}$

- Provincial taxable revenue: $6286 \times 12 - 10207 = \$65225$

  Provincial taxes: $40707 \times 0.0506 + 24518 \times 0.077 = \boxed{\$3947.66}$

n) Determine the federal and territorial taxes for a semi-monthly taxable revenue (without the personal exemptions) $2146 in the Yukon.

- Federal taxable revenue: $2146 \times 24 - 11635 = \$39869$

  Federal taxes: $39869 \times 0.15 = \boxed{\$5980.35}$

- Territorial taxable revenue: $2146 \times 24 - 10207 = \$41297$

  Territorial taxes: $41297 \times 0.064 = \boxed{\$2643.01}$

5. Calculate the Net Revenue:

a) Tim is employed in the Yukon and earns a gross revenue of $1320 per week
- determine his EI and CPP deductions:

Annual Gross Revenue: $1320 \times 52 = \$68640$

CPP: 2748.90 (max) $\Rightarrow$ \$52.86 per week.

EI: 860.22 (max) $\Rightarrow$ \$16.54 per week

- Knowing that Tim pays $100 each week towards an RRSP and $10 to his union. Calculate the taxes he pays each week.

Taxable income without personal exemptions:

$68640 - 2748.90 - 860.22 - 52(100+10) = \$59310.88$

- Federal taxable income: $59310.88 - 11635 = \$47675.88$

Federal taxes: $47630 \times 0.15 + 45.88 \times 0.205 = \$7153.91$

each week: **\$137.58**

- Territorial taxable income: $59310.88 - 10207 = \$49103.88$

Territorial taxes: $47630 \times 0.064 + 1473.88 \times 0.09 = \$3180.97$

each week: **\$61.17**

- Net revenue

$59310.88 - 7153.91 - 3180.97 = \$48976$

each week: **\$941.85**

b) Rachelle Is employed in the Yukon and has a semi-monthly salary of $2325. She pays $22.30 to her union each time she gets paid and $150 towards an RRSP. What is her net revenue?

- Annual gross revenue: $2325 \times 24 = \$55800$
- CPP: $(55800 - 3500) \times 0.051 = \$2667.3$
- EI: $\$860.22$ (max)
- Other deductions before taxes: $(22.30 + 150) \times 24 = \$4135.20$
- Taxable income (without personal exemptions):
  $55800 - 2667.3 - 860.22 - 4135.20 = \$48137.28$
- Federal taxable income: $48137.28 - 11635 = \$36502.28$

  Federal taxes: $36502.28 \times 0.15 = \$5475.34$
- Territorial taxable income: $48137.28 - 10207 = \$37930.28$

  Territorial taxes: $37930.28 \times 0.064 = \$2427.54$

NET INCOME:

$48137.28 - 5475.34 - 2427.54 = \boxed{\$40234.40}$

c) You took a job in Vancouver that pays $10.45/h and you work 25h per week. You get paid every two weeks. You don't pay a union or have any deductions to your salary before taxes. What is your net revenue per period?

- Annual Gross Revenue: $10.45 \times 25 \times 52 = \$13585$
- CPP: $(13585 - 3500) \times 0.051 = \$514.34$
- EI: $13585 \times 0.0162 = \$220.08$
- Other deductions before taxes: $\$0$
- Taxable revenue without personal exemptions:

  $13585 - 514.34 - 220.08 = \$12850.58$

- Federal taxable income: $12850.58 - 11635 = \$1215.58$

  Federal taxes: $1215.58 \times 0.15 = \$182.34$

- Provincial taxable income: $12850.58 - 10207 = \$2643.58$

  Provincial taxes: $2643.58 \times 0.0506 = \$133.77$

NET REVENUE:

$12850.58 - 182.34 - 133.77 = \$12534.47$

per period: $12534.47 \div 26 = \boxed{\$482.10}$