Grade 10 Essential
Quiz Debrief
Week 2

22-11-17

MrF

MrF

GRADE 10 ESSENTIAL
WEEKLY QUIZ – WEEK 2

Name:_____

Date: _____

Use a calculator

- You really should use **your** single sheet of Study Notes (Cheat Sheet).
  You may use mine until such time as you make your own
- Templates and formulae have been provided.
- Each question is worth two marks unless otherwise indicated.
- **Time limit**: 40 Minutes

Round decimal answers and money to the nearest 0.01 or as indicated

Put an 'X' here: ☐ ; if you read these instructions (1 mark)

Some students missed this

You should slowly adapt my cheat sheet and customize yours. You need to submit YOUR cheat sheet with the Final Exam

FORMULAE

UNIT B – PERSONAL FINANCE FORMULAE

End of Quiz

- GROSS Income: All Income.
- NET INCOME: Income after deductions
- **NET INCOME** = GROSS – Income Tax(es) - CPP contributions - EI Contributions - Other Deductions (Parking, charity, etc)
- To calculate income taxes: **Taxable income** = Gross – Company Pension Contribution - RRSP Contribution - Union Dues Paid
- **Income tax(es)** = tax rate(s) * Taxable income

My Cheat Sheet ⇒

which you are slowly adapting to your cheat = sheet

GRADE 10 ESSENTIAL REFERENCE NOTES (SKELETON)

This is ***my*** teacher version of Grade 10 Essential Reference Notes. You will want to definitely *prepare your own*! I **do not explain** these notes! They are **mine**. Use them at your **own risk**!

Unit A – GAMES AND NUMBERS (PROBLEM SOLVING)

To solve many 'math' problems (and those of life too), try a few of these **List** (and Count), **Draw** a Diagram, **Guess** and Check, **Model** the problem, Use a **Table**, See if you are missing any information, Solve a **simpler** version, Look for a **Pattern**, use **Logic**

THINK! Explore

UNIT B – PERSONAL FINANCE

GROSS Income: All Income. **Bi-Weekly** = every two weeks

NET INCOME: Income after **deductions**

NET = GROSS – (Income Taxes + CPP contributions + EI Contributions + Other Deductions)

To calculate income taxes:

Taxable income = Gross – (Company Pension Contribution + RRSP Contribution + Union Dues Paid)

Income tax(es) = tax rate(s) * **Taxable income**

UNIT C – MEASUREMENT (See conversion tables)

Mega = 1,000, 000; Kilo = 1,000; Centi = $^1/_{100}th$; Milli = $^1/_{1,000}th$

Should be familiar with *many* of these conversions (memorize)		
Metric ↔ Metric	**'Old' System**	**Metric ↔ Old System**
1 **kilo**metre [km] = **1,000** m	1 ft = 12 in	1 in ≅ **2.54** cm
1 metre [m] = 100 cm	1 yd = 3 feet = 36 in	1 m ≅ 3.28 ft
1 **centi**meter = **1/100**th metre	1 mi = 5280 ft = 1760 yd	1 kg ≅ **2.205** lb
1 centimetre [cm] = 10 mm	1 pound [lb] = 16 onces [oz]	1 mi ≅ **1.609** km
1 kg = 1,000 g	1 ton = 2,000 lb	1 Imp Gallon ≅ 4.55 L
1 gram [g] = **1,000 milli**gram [mg]	1 quart [qt] = 2 pints [pt]	1 US Gallon ≅ 3.79 L
1 L = 1,000 mL	4 quarts = 1 gallon [gal]	$°F = (^9/_5)°C + 32$
1 kL = 1,000 L		$°C = {}^5/_9 * (°F - 32)$

Unit D: Two-Dimensional Geometry

(See also separate full formulae sheet)

Area ≡ amount of squares inside surface of shape

1. The Canada Pension Plan (**CPP**):

a. is a defined benefit retirement plan that lets you relax in luxury when you retire; lol! $900/month is NOT a life of luxury

b. is a contributory plan to which workers pay a portion of their employment income;

c. is a completely voluntary plan that can be declined using a T4B tax form;

d. has recently been changed so it can only be collected when reaching age 67 now.

There is another source of income for the elderly, the Old Age Security (OAS), there was talk of changing that to age 67 several years ago

2. An example of a **deduction** from employment income is:

↳ come off pay

a. CPP benefit ↳ something you get

b. CCB (Canada Child Benefit)

c. income from commissions and tips

d. charity contributions

you can have your boss take off money off your pay and sent to a charity of your choice

3. Two things ('expenditures') that Provincial Taxes pay for are: (expenses)

a. hotels and gas stations — private companies

b. pipelines and airport security ← Federal Government

c. education and health care — OVER HALF OF THE PROVINCE Budget goes to this "Free" stuff!

d. Air Force and Navy — Manitoba does not have an Air Force or a Navy. That is the Canadian (Federal) government

4. 4.95% of $1,230 is:

(a) $60.89 b. $92.00 c. $248.48 d. $102

$4.95/100 \cdot \$1{,}230 = \$60.89$

```
4.95/100*1230
                60.885
```

5 or more

Know how to estimate with rounded numbers?

$5/100 \cdot 1200 = 60$

So somewhere around 60

l.o.l

Test Taking Strategy: Round & Estimate

5. Debbie gets paid at an hourly rate of $13.20 per hour. She works the following hours in one week. Determine her Gross Income if overtime is paid at time-and-a-half **after 8 hours** in any one day.

Reg hr 8 8 8 8 4 = 36hr

Day	M	T	W	Th	F	Total
Hours	9	10	9	12	4	= 44hr
O/T hr	1	2	1	4	0	= 8hr

(a) $633.60 b. $580.80 c. $118.80 d. $739.20

Reg Pay: $\$13.20/hr \cdot 36hr = \$475.20$

O/T Pay: $(\$13.20/hr \cdot 1.5) \cdot 8hr = \$158.40$

$\$633.60$ Gross Pay

6. Brian has a gross income of **$345** per week. He contributes **$40**/week to an **RRSP**. His income tax rate is **16%.** How much tax is deducted from his pay cheque?

a. **$48.80** b. **$16** c. **$55.20** d. **$305**

? You get all your freestuff for $16/week?

would you bother working ?

$345 − $40 = $305

Gross − Non-Taxable RRSP = Taxable

$305 · 16/100 = $48.80

To calculate income taxes: **Taxable income** = Gross – Company Pension Contribution - RRSP Contribution - Union Dues Paid

- **Income tax(es)** = tax rate(s) * Taxable income

Test Taking strategy: Don't pick the answers that do not make sense

7. Two numbers add to make 14 and their difference is 2. The two numbers are:

a. {8, 6} b. {12, 2} c. {7, 7} d. {5, 3}

4 Choices! Pick the one that works!

Guess which one now!

a. {8, 6}

8+6=14 ✓

8−6=2 ✓

Yes!

~~b.~~ {12, 2}

12+2=14 ✓

12−2=10

Not 2

~~c.~~ {7, 7}

7+7=14 ✓

7−7=0

Not 2

d. ~~{5, 3}~~

5+3=8

Not 14

7. Two numbers add to make 14 and their difference is 2. The two numbers are:

of course, if you were not given 4 choices to test you would have to do some calculations either on paper or mentally in your head

	1st nbr	2nd nbr	Sum = 14	Difference = 2 ?	
WRONG ✗	10 ?	14−10 = 4	14	10 − 4 = 6	Want "2"
Guess Again	9 ?	14 − 9 = 5	9+5 = 14 ✓	9 − 5 = 4	Want 2! Getting closer
Guess again	8 ?	6	8+6 = 14	8 − 6 = 2 ✓ Yes	

8 + 6 = 14
8 − 6 = 2

The two numbers are 8 and 6

Test taking strategy ⇒

But if you were given some choices of answer, just test each choice rather than make your own

OPEN RESPONSE

SHOW YOUR WORK for best mark

1. **Explain**. Would you rather work for **$14.50** per hour for **40** hours per week and **5%** commission on all weekly sales of $5,200

(A)

Or

Would you rather work for **$16.00** per hour for **35** hours a week and a **10%** commission on sales over $3,000 based on weekly sales of $5,200?

(B)

[Calculate and compare the Gross Pay of each option]

(A) Pay: $\$14.50/hr \cdot 40\,hr = \$580$

Commission $5/100 \cdot 5{,}200 = \$260$

Gross $\$840$

(B) Pay: $\$16/hr \cdot 35\,hr = \$560$

Commish: $10/100 \cdot \$2{,}200 = \$220$

Gross $\$780$

I would rather work for the first pay contract

$5200 - 3000 = 2200$ SALES No commission portion

***Test Taking Strategy**: Show work, even some work!*

Teachers often give part marks for a partial solution

Do Question 2 or 3, not both. *If* you do both *then* the better one will be marked

2. The sum of two numbers is 14. Their product is 48. Determine the two numbers.

2 marks

1st nbr	2nd nbr	Sum	Product
✗ 10	4	10 + 4 = 14	10 · 4 = 40 → Want 48
✗ 9	5	9 + 5 = 14	9 · 5 = 45 → want 48 getting close!
(8)	(6)	8 + 6 = 14 ✓	8 · 6 = 48 ✓ Yes

The two numbers are 6 & 8

Notice how you could do this in your head if your times table were nailed down!

OR

3. Solve for x: (1 mark each)

a. $\frac{5}{8} = \frac{x}{24}$

bananas / $: $\frac{5}{8} \quad \frac{x}{24}$ "Cross multiply"

$5 \cdot 24 = 8 \cdot x$

$\frac{120}{8} = \frac{8 \cdot x}{8}$

$x = \frac{120}{8} = 15$

Check? $5 \cdot 24 = 8 \cdot 15$? $120 = 120$ ✓

5 bananas for $8; how many bananas for 24? Test Tip. Make a real example

b. $\frac{2}{5} = \frac{7}{x}$

$\frac{2}{5} \quad \frac{7}{x}$ "Cross multiply"

$2 \cdot x = 5 \cdot 7$

$\frac{2 \cdot x}{2} = \frac{35}{2}$

Divide both amounts by 2 they are still equal

$x = 35/2 = 17.5$

Check: $2 \cdot 17.5 = 5 \cdot 7$? ✓

$35 = 35$

BONUS QUESTIONS [Extra marks if you need them]
[Show work for best mark, mark value as indicated]

1. Determine the **sum** (add them all up) of all the whole counting numbers from 1 to 20. [two marks]

$1 + 2 + 3 + + + \text{etc} + + 18 + 19 + 20 = ?$

```
1+2+3+4+5+6+7+8+
9+10+11+12+13+14
+15+16+17+18+19+
20
```

210

Isn't there a better method?

$1 + 2 + 3 + + + \text{etc} + + 18 + 19 + 20 = ?$

$1+20 = 21$

$2+19 = 21$

~~$3+18=21$~~

How many 21's ?

$10 \cdot 21 = 210$

Math is all about seeing patterns!

2. Jason earns $14.75 / hr. He works 30 hours this week. He has $25 each pay sent directly to his own Registered Retirement Savings Plan (RRSP). His income tax 'bracket' is 18% (combined Federal and Provincial). (This RRSP should work out to be a bucket of money of at least a $100,000 in 30 years!). CPP contributions are deducted from his pay at 5.45% of his Gross pay. Employment Insurance contributions are deducted from his pay at 1.95% of his Gross Pay. Jason has $6.00 / week deducted from his pay for coffee and also has a charity donation of $5 to the United Way Charity deducted! [Complete a template form]

6 marks

a. Determine Jason's Gross Pay [2marks]

b. Determine Jason's Taxable Income [2 marks]

c. Determine Jason's Net (Take Home) Income [2 marks]

[Complete a Net Income Template Attached]

2. Jason earns $14.75 / hr. He works 30 hours this week. He has $25 each pay sent directly to his own Registered Retirement Savings Plan (RRSP). His income tax 'bracket' is 18% (combined Federal and Provincial). (This RRSP should work out to be a bucket of money of at least a $100,000 in 30 years!). CPP contributions are deducted from his pay at 5.45% of his Gross pay. Employment Insurance contributions are deducted from his pay at 1.95% of his Gross Pay. Jason has $6.00 / week deducted from his pay for coffee and also has a charity donation of $5 to the United Way Charity deducted! [Complete a template form]

6 marks

a. Determine Jason's Gross Pay [2marks]

b. Determine Jason's Taxable Income [2 marks]

c. Determine Jason's Net (Take Home) Income [2 marks]

[Complete a Net Income Template Attached]

Having a proper calculator helps that shows everything you type in

417.5-75.15-24.12-8.63-6-5

298.6

NET INCOME CALCULATION TEMPLATE		
Regular Pay	442.50	Pay Rate X Hours 14.75 · 30
O/T Pay	0	No overtime
Commission (% of sales)	0	No commission
GROSS INCOME =	442.50	FYI: $30/week 40yrs = $130,000
Non-Taxable Deductions ↓:		
– RRSP Contribution	– $25	Private retirement plan
– Union Dues	– 0	
– Company Pension Contribution	– 0	
TAXABLE INCOME =	417.50	
Income Taxes ↓:		
–Taxes Provincial / –Taxes Federal 18%	–75.15	Tax rate(s) X Taxable Income 18/100 · 417.50
Taxable deductions↓		!!!
–CPP Contribution 5.45%	–24.12	% of Gross Income 5.45/100 · 442.50
–EI Contribution 1.95%	– 8.63	% of Gross Income 1.95/100 · 442.50
–Parking	– 6.00	
–Coffee Fund	– 0	
–Charity Donation	– 5.00	
= NET PAY:	298.60	

So that is pretty much the first seven days of the course!

Start tweaking up my cheat sheet, so you can adapt your own!

Briefing Complete

LOAD CLEAR !!