

MrF

Grade 10 Essential

Quiz Debrief



22 - 09 - 15

week 2

Mrf

Name: _____

Date: _____

GRADE 10 ESSENTIAL QUIZ WEEK TWO - 220915

Instructions: (standard instructions)

- Use a calculator where necessary unless indicated otherwise
- Show work for best mark.
- Open BOOK this time

SHOW!
WORK!

Show work!

- Better to organize your thoughts!
- Easier to go back and check your method and review!
- Allows teacher to give part marks!

1. Karen is 22 years old. Her cat has six toes. She works 35 hours a week while in College. Her rate of pay is \$16.50/hour. She had 30 hours of regular pay and 5 hours of overtime pay. Overtime is paid at 'time-and-a-half'.

She pays 7% of her taxable income to the Federal Government and 10% to the Provincial Government.

She has \$20/week put into a Registered Retirement Saving Plan (RRSP) by her payroll department which is untaxed. (With just that small amount of weekly contribution she will have \$175,000 when she retires). She pays 5.35% of her gross pay into the government retirement plan (CPP). And she has 1.95% of her gross deducted for Employment Insurance.

Calculate her Net Pay by **completing** a Net Pay Template provided.
[6 marks]

BTW: The fact she is 22 and her cat has six toes has nothing to do with the problem. Sometimes there is lots of information, not all of it useful. Kinda like real life.


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Calculate her Net Pay by completing a Net Pay Template provided. [6 marks]

Regular Pay	\$ 495.00	Pay Rate X Hours $\$16.50/hr \cdot 30hr$
→ O/T Pay	+ \$ 123.75	$(\$16.50/hr \cdot 1.5) \cdot 5hr$
→ Commission (% of sales) None	+ 0	
Total GROSS INCOME =	\$ 618.75	
Non-Taxable Deductions ↓:		
- RRSP Contribution	- 20.00	
- Union Dues	- 0	<i>She is not in a Union</i>
- Company Pension Contribution	- 0	<i>The company does not set her up with a pension plan that they contribute to as well!</i>
TAXABLE INCOME =	598.75	<i>The amount used to calculate income tax</i>

TAXABLE INCOME = →	598.75	
Income Taxes ↓:		<i>Tax rate · taxable income</i>
-Taxes Provincial @ <u>10%</u>	- 59.88	← $10/100 \cdot 598.75$
-Taxes Federal @ <u>7%</u>	- 41.91	← $7/100 \cdot 598.75$
Taxable deductions ↓		
-CPP Contribution <u>5.35%</u>	- 33.10	<i>% of Gross Income</i> ← $5.35/100 \cdot \$618.75$
- EI Contribution <u>1.95%</u>	- 12.07	<i>% of Gross Income</i> ← $1.95/100 \cdot \$618.75$
-Parking	- 0	
-Coffee Fund	- 0	
-Charity Donation	- 0	
	598.75 - 59.88 - 41.91 - 33.10 - 12.07 451.79	
NET PAY:	451.79	Weekly? Bi-Weekly? Monthly?

2. Hailey worked the following hours last week:

M	T	W	Th	F	SA	Su
8	6	4	0	10	10	6

=44 ✓

Her *regular* rate of pay is **\$12.50 / hour**. She gets overtime rate of pay of time and a half, 1.5 times her regular pay after **8 hours** in a day.

Calculate Hailey's Gross Pay for the week. [3 marks]

Be neat and organized!

$$\begin{array}{l} \text{Reg hr:} \quad 8 + 6 + 4 + 0 + 8 + 8 + 6 = 40 \text{ hr Reg} \\ \text{o/T hr} \quad 0 + 0 + 0 + 0 + 2 + 2 + 0 = 4 \text{ hr o/T} \end{array}$$

44 ✓

$$\begin{array}{l} \text{Reg Pay} = \text{Pay Rate} \cdot \text{Reg Hours} = \$12.50/\text{hr} \cdot 40\text{hr} = \$500 \\ \text{o/T Pay} = (\text{Reg Rate} \cdot 1.5) \cdot \text{o/T hours} = (\$12.50/\text{hr} \cdot 1.5) \cdot 4 = \$75 \end{array}$$

$$\text{Gross Pay} = \underline{\$575}$$

Hailey's Gross Pay for the week will be \$575

Your calculations may not be quite this thorough and complete, but this is certainly what you should be thinking!

3. Two numbers multiply to make 30 , their sum when added is 11 . Determine the two numbers (show work!!) [2 marks]

Lots of ways to solve this! The best method for now is to Guess and Check!
Guess at the answer, check to see if it is correct!
If it is not correct, guess again!

1st nbr	2nd nbr	product (multiply)	Sum (add)	want 11
$\times 3$	$\times 10$	$3 \cdot 10 = 30 \checkmark$	$3 + 10 = 13$	\checkmark
Guess $(5)?$	again $(6)?$	$5 \cdot 6 = 30 \checkmark$	$5 + 6 = 11 \checkmark$	

Yes

The two numbers are 5 and 6
 $\{5, 6\}$

Notice this problem is quick if you have times tables nailed down!

4. Multiply and divide using the normal algorithms (step) [show work]
 [1 mark each]

↳ "steps"

Divide

a. $185 * 6 = 1,110$

you have 185 six-packs of coke

$$\begin{array}{r} 185 \\ \times 6 \\ \hline 1,110 \end{array}$$

$$\begin{array}{r} 185 \\ 185 \\ 185 \\ 185 \\ 185 \\ + 185 \\ \hline 1,110 \end{array}$$

Multiplication is just repeated addition
 Nail down your times tables soon!

b. $456 \div 6 = 76$ $456/6$

456 cans of pop; how many six packs was it?

$$\begin{array}{r} 456 \\ - 6 \\ \hline 450 \\ - 6 \\ \hline 444 \\ - 6 \\ \hline 438 \\ - 6 \\ \hline 432 \\ - 6 \\ \hline \end{array}$$

Keep subtracting how many six... times

$$\begin{array}{r} 76 \\ 6 \overline{)456} \\ \underline{-42} \\ 36 \\ \underline{-36} \\ 0 \end{array}$$

Division is repeated subtraction

$$\begin{array}{l} 6 \cdot 5 = 30 \\ 6 \cdot 6 = 36 \end{array}$$

Done! No more six packs! zero left over

Check!
 $76 \cdot 6 = 456 \checkmark$

$$\begin{array}{r} 76 \\ \times 6 \\ \hline 456 \checkmark \end{array}$$

Someday your child or nephew will ask you how to do this!!!

Bonus Questions (2 extra marks each marks if you need them)

a. **Problem Solving.** Calculate how many different ways can Christina play each of her five favourite songs (once) in some order on her iPod. Show your method.

Think? Draw? Make a simpler version? Nobody got this question!
 Logic? Find pattern, ...

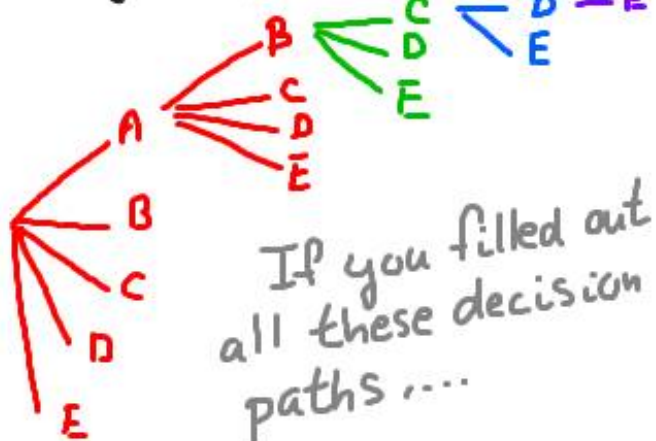
Draw



Choices

$$5 \cdot 4 \cdot 3 \cdot 2 \cdot 1 = 120 \text{ different playlists!}$$

Song 1st 2nd 3rd 4th 5th



Start simple?
 # of Songs # of diff playlists

1 song	only one playlist
2 songs	two playlists AB or BA
3 songs	ABC, ACB, BAC, BCA, = 6 CAB, CBA
4 songs	For each of these we can plug in the 4th song in 4 places

I often give bonus questions to see how you think or to prepare you for future lessons

ABC
 ↗ ↘ ↙ ↚
 D
 so $4 \cdot 6 = 24$
 5 songs ... $24 \cdot 5 = 120$

b. If 5 bananas cost \$12, then calculate how much 22 bananas will cost.

↳ "x"

Here is the best and most effective method: 'proportions'

$$\frac{\$x}{22 \text{ bananas}} = \frac{\$12}{5 \text{ bananas}}$$

Cross multiply!

$$x = \frac{22 \cdot 12}{5} = \$52.80$$

Effective shoppers do this all the time!

ONLY Two students got this! We will be using this a lot!

or how about calculate the price of one banana?

$$\$12 \div 5 \text{ bananas} \quad 12/5 = 2.4$$

\$2.40 for one banana

therefore

$$\$2.40 \cdot 22 =$$

$$\frac{22 \cdot 12}{5}$$

$$= 52.8$$

$$2.40 * 22$$

$$52.8$$

$$\$52.80$$

c. Determine the sum (add them all up) of all the counting numbers from 1 to 20. [Show how you figured it out]

ONLY A COUPLE
Students did
this!
Easy marks

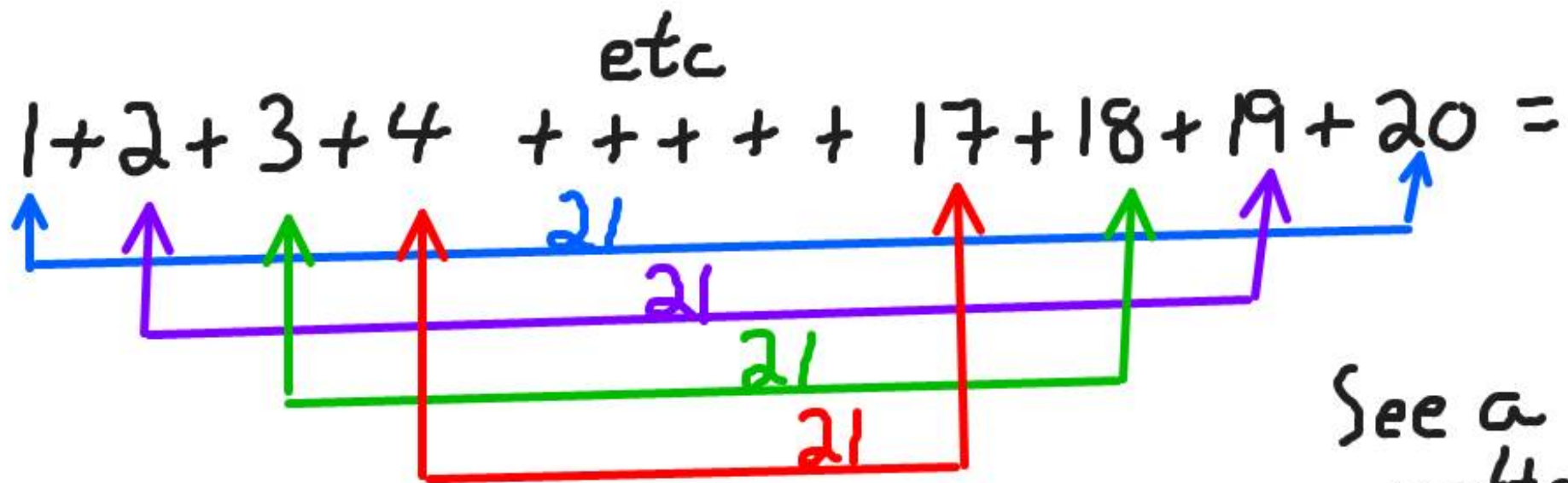
1+2+3+4+^{etc} 18+19+20=? Add'em up!

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

210

Having a calculator
that shows everything you
type in is very useful!

Wanna know a more effective
way to think? \Rightarrow



See a pattern?

How many 21's pairing up the sequence? 10

$$21 \cdot 10 = \textcircled{210}$$

The sum of the numbers is 210

Start from the outside and work in!

**That completes the debrief of our
first math quiz**

Lots more like this every week!

**If you are just getting back into the
groove of studying and learning do
not panic yet!**





LOAD CLEAR !

