

# ***Grade 10 Essential Quiz Debrief***

***Week 3***

22-11-24

**MrF**



**GRADE 10 ESSENTIAL  
QUIZ WEEK 3 - 221124**

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Weekly quiz.

Closed book. Use your cheat sheet (use mine for now if necessary)

**Conversion Tables.** Always allowed the conversion tables

Round all decimal answers to the nearest 0.01 unless otherwise indicated

Each individual question is worth two marks

**Show work.**

↳ How else would  
you get the answer!

Be pedantic! Complete!

Pretend teaching your kid or nephew!

They even  
have example  
conversions!

1. Solve for x:

This is  
"bread and butter"  
basics!  
Critical!

a.  $\frac{5}{12} = \frac{x}{30}$

$\frac{5}{12} = \frac{x}{30}$  (with green arrows indicating cross-multiplication)

$5 \cdot 30 = 12 \cdot x$

$\frac{150}{12} = \frac{12 \cdot x}{12}$  (with a red slash through the 12 in the denominator)

Both values  
are still equal

$\textcircled{12.5} = \frac{150}{12} = x$

Check  $5 \cdot 30 \stackrel{?}{=} 12 \cdot 12.5$   
 $150 = 150 \checkmark$  Yes



b.  $\frac{7}{8} = \frac{10}{x}$

$\frac{7}{8} = \frac{10}{x}$  (with green arrows indicating cross-multiplication)

$7x = 80$

$x = \frac{80}{7} = 11.\underline{42857143}...$

$x = 11.43$  rounded to  
nearest 0.01

as per  
instructions

28 is  
closer to  
30 than  
20

If 5 "goes with" 12  
then what goes  
with 30?

2. If 8 bananas cost \$5.60, determine the cost of 14 bananas.

What you are looking for "x"

A rather realistic problem if you are the family shopper!

$$\frac{\$x}{14 \text{ bananas}} = \frac{\$5.60}{8 \text{ bananas}}$$

$$x \cdot 8 = 14 \cdot 5.6$$

$$\frac{8x}{8} = \frac{78.4}{8}$$

$$x = 9.8$$

14 bananas costs \$9.80

WRITE Down the units to make sure numbers are in right place

OR:  $\frac{x}{14} = \frac{5.60}{8}$

$$x = \frac{14 \cdot 5.60}{8} = \$9.80$$

I notice one student calculated the price of one banana then the cost of 14

$$\frac{\$5.60}{8 \text{ bananas}} = \$0.70 / \text{banana}$$
$$\$0.70 / \text{banana} \cdot 14 \text{ bananas} = \$9.80$$

3. Convert the units of measure as indicated (use either method)

a.  $5.3 \text{ km} = \underline{x} \text{ mi}$

$$\frac{x \text{ mi}}{5.3 \cancel{\text{ km}}} = \frac{0.6214 \text{ mi}}{1 \cancel{\text{ km}}}$$

$$x = \frac{5.3 \cancel{\text{ km}} \cdot 0.6214 \text{ mi}}{1 \cancel{\text{ km}}} = 3.29 \text{ mi}$$

Sounds about right  
a bunch of small units is same as a smaller number of large units

proportions w/ cross multiply  
OR  
unit factor method

OR

$$5.3 \cancel{\text{ km}} \cdot \frac{0.6214 \text{ mi}}{1 \cancel{\text{ km}}} \approx 3.29 \text{ miles}$$

(b.)  $20 \text{ lb} = \underline{x} \text{ kg}$

$$\frac{x \text{ kg}}{20 \text{ lb}} = \frac{1 \text{ kg}}{2.205 \text{ lb}}$$

$$x = \frac{20 \cancel{\text{ lb}} \cdot 1 \text{ kg}}{2.205 \cancel{\text{ lb}}}$$

$$x = \underline{9.07 \text{ kg}}$$

(OR)

$$20 \cancel{\text{ lb}} \cdot \frac{1 \text{ kg}}{2.205 \cancel{\text{ lb}}} = \underline{9.07 \text{ kg}}$$

Sounds about right  
a bunch of small units is same as a smaller number of large units

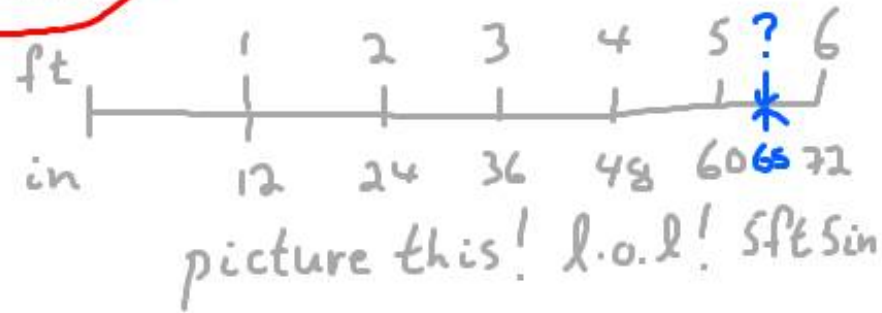
Conversions SI to Non-SI Length		
1 metre [m]	=	3.2808 feet [ft]
1 metre [m]	=	39.37 inches [in]
1 kilometre [km]	=	0.6214 miles [mi]
1 mile [mi]	=	1.609 km
1 inch [in]	=	2.54 cm

Conversions Non-SI Imperial - Mass		
1 kilogram kg	=	2.205 pounds lb
1 tonne	=	1.1 ton

#### 4. Convert as indicated

a. 65 inches = 5 ft 5 in  
Whole feet      leftover inches

$65 \text{ in} \cdot \frac{1 \text{ ft}}{12 \text{ in}} = 5.416666 \text{ ft}$   
 $5 \cdot 12 = 60 \text{ inches}$  so 5 inches left over!

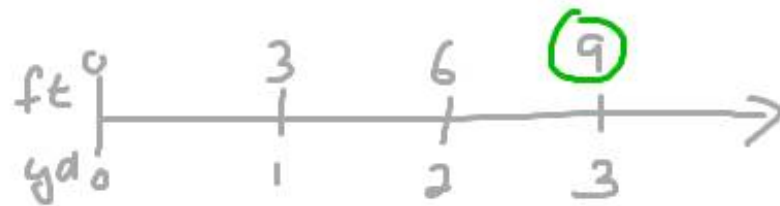


(b) 3 yards = x ft

$\frac{x \text{ ft}}{3 \text{ yd}} \rightarrow \frac{3 \text{ ft}}{1 \text{ yd}}$

$x = 3 \cdot 3 = 9 \text{ ft}$

(OR)  $3 \text{ yd} \cdot \left( \frac{3 \text{ ft}}{1 \text{ yd}} \right) = 9 \text{ ft}$



Conversions Non-SI (Imperial) for Length		
1 mile [mi]	=	1,760 yards [yd]
1 yard [yd]	=	3 feet [ft]
1 mile [mi]	=	5280 ft
1 foot [ft]	=	12 inches [in]
1 yard [yd]	=	36 inches [in]

⇐ The conversion sheet!

5. Add or subtract as indicated:

a.

$$\begin{array}{r} 1 \text{ ft} \\ 4 \text{ ft } 3 \text{ in} \\ + 2 \text{ ft } 10 \text{ in} \\ \hline 7 \text{ ft } 13 \text{ in} \end{array}$$

b.

$$\begin{array}{r} + 16 \text{ oz} \\ 6 \text{ lb } 5 \text{ oz} \\ - 2 \text{ lb } 10 \text{ oz} \\ \hline 4 \text{ lb } 11 \text{ oz} \end{array}$$

c.  $3 \text{ hr } 40 \text{ min} + 1 \text{ hr } 25 \text{ min} = 7 \text{ hr}$

$$3 \text{ hr} + 1 \text{ hr} + 40 \text{ min} + 25 \text{ min}$$

$$4 \text{ hr} + 65 \text{ min}$$

$$4 \text{ hr} + 1 \text{ hr} + 5 \text{ min}$$

$$5 \text{ hr} + 5 \text{ min}$$

$$5 \text{ hr } 5 \text{ min}$$

$$\begin{array}{r} 3 \text{ hr } 40 \text{ min} \\ + 1 \text{ hr } 25 \text{ min} \\ \hline 5 \text{ hr } 5 \text{ min} \end{array}$$

6. Jason comes to work at 08:45 and leaves at 16:30. He gets a 30 min lunch break. Determine the amount of time for which he gets paid.

$$\begin{array}{r} 15 \quad 90 \\ \cancel{16:30} \text{ Finish} \\ - 8:45 \text{ Start} \\ \hline 7:45 \text{ At work!} \\ - 0:30 \text{ lunch} \\ \hline 7:15 \end{array}$$

***Jason gets paid for  
7hr 15 min of work***



7. Kele gets paid \$14.30 per hour. He gets overtime pay after 8 hours in any day. Overtime pay is 'time and a half'. Calculate Kele's **Gross** pay for the week. His work schedule hours are as follows:

Mon	Tues	Wed	Thur	Fri	Sat	Sun
8	10	8	7	11	5	0

Reg Hrs: 8, 8, 8, 7, 8, 5, 0 = 44 hr<sup>Reg</sup>  
 O/T Hr: 0, 2, 0, 0, 3, 0, 0 = 5 hr<sub>O/T</sub>

Pay: Reg 44 hr • \$14.30/hr = \$629.20  
 O/T 5 hr • (14.30/hr • 1.5) = \$107.25  
 Gross Pay: \$736.45

Sounds about right! \$700/wk • 50wk = \$35K/yr  
 so over \$35K/yr  
 a good start!!

8. Farmer brown has 30 animals. Some chickens and cows. He is not sure how many of each he has. He knows they have a total of 100 legs. How many chickens does Farmer brown have? [Hint: Guess and Check]

Guess & Check!!

	# of chicks	# of cows <small>30 - #chicks</small>	cows + chicks	# legs <small>#chicks · 2 + #cows · 4</small>	
<del>5?</del>		25	30	$5 \text{ chicks} \cdot 2 \text{ legs/chick} = 10$ $+ 25 \text{ cows} \cdot 4 \text{ leg/cow} = 100$	= 110 legs X want 100
Guess again 8?		<del>22</del>	30 ✓	$8 \cdot 2 = 16 \text{ chick legs}$ $22 \cdot 4 = 88 \text{ cow legs}$	= 104 legs X closer!!
Guess again 10?		<del>20</del>	30	$10 \cdot 2 = 20 \text{ chick legs}$ $+ 20 \cdot 4 = 80 \text{ cow legs}$	} 100 legs! Yes!

10 works

The farmer has 10 chickens

## BONUS QUESTION (extra marks if you need them)

9. Determine the sum of all the counting numbers from 1 to 40

*Lol, we have done this a few times!  
Find a simple pattern*

$$1 + 2 + 3 + 4 + \dots + \text{etc} + \dots + 37 + 38 + 39 + 40 = ?$$

*See a pattern?  
How many 41's?  
20*

$$\begin{array}{r} 41 \\ \times 20 \\ \hline 820 \end{array}$$

***That was it!***

***How students managed to turn a twenty  
minute quiz into more than 60 is rather  
scary!***

