FnMt 016 REVIEW I Discussions

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[Run: 09/24/2016 at 0:18 Seed: 8025. Order of Checkable Items: List.]

Rv **I-1.** Given the *tabular number-phrase*

Thousand	Hundred	Ten		Tenth	Hundredth	Thousandth	
2		3	7		8	4	**Gallons of Gas**

rewrite it as a *decimal number-phrase*:

Discussion: First, we must not forget to enter 0 where no digit is given. Then, since we are dealing with **Single Gallons of Gas** it is the 7 which must be *pointed*. Third, the denominator must not be omitted.

Rv **I-2.** Given the *tabular number-phrase*

Clevelands	Franklins	Hamiltons	Washingtons
7	3		

rewrite it as a *decimal number-phrase* with 3 as pointed digit.

Discussion: Since it is the 3 which must be pointed we must use **Franklins** as denominatore.

Rv **I-3.** Given the *decimal number-phrase* 0.07 **Franklins**, rewrite it as a *tabular number-phrase*:

Discussion: Since it is the left-most 0 which is pointed, it is the left-most 0 which must be under **Franklins** in the header. The other digits are placed under the header according to their place in the decimal number phrase relative to the pointed digit.

Rv **I-4.** Given the decimal number-phrase 0.008 **Clevelands**, rewrite it with the leftmost non-zero digit as pointed digit.

Discussion: Since the left-most *non-zero* digit is 8, it is the 8 which must be placed under **Clevelands** in the header. The other digits are placed under the header according to their place in the decimal number phrase relative to the pointed digit.

Rv **I-5.** Convert 23758.64 **Watts** to **Kilo Watts**

Discussion: First we place 23758.64 **Watts** under a metric header by first placing the pointed digit, namely 8, under **Single** and then the other digits according to their place in the decimal numerator:

	Kilo	Hecto	Deka		Deci	Centi	Milli	Watts
2	3	7	5	8	6	4		

Then we point the digit under **Kilo**, namely 3, and we write the decimal number phrase accordingly: 23.75864 **Kilo Watts**

Rv **I-6.** Convert 728.64 **Centi Watts** to **Deka Watts**

Discussion: First we place 728.64 **Centi Watts** under a metric header by first placing the pointed digit, namely 8, under **Centi** and then the other digits according to their place in the decimal numerator:

Kilo	Hecto	Deka		Deci	Centi	Milli		Watts
			7	2	8	6	4	

Then we point the digit under **Deka**, namely 0 and we write the decimal number phrase accordingly: 0.72864 **Deka Watts**

Rv **I-7.** Convert 0.072864 **Kilo Liters** to **Milli Liters**

Discussion: First we place 0.072864 **Kilo Liters** under a metric header by first placing the pointed digit, namely the leftmost 0, under **Kilo** and then the other digits according to their place in the decimal numerator:

	Kilo	Hecto	Deka		Deci	Centi	Milli	Liters
	0	0	7	2	8	6	4	

Then we point the digit under **Milli**, namely 4, and we write the decimal number phrase accordingly: 72 864. **Milli Liters**

Rv **I-8.** All we know about Mary's collection and Jenny's collection is that

$$\textbf{Mary} \geqq \textbf{Jenny}$$

Circle ALL of the following comparison sentences that must be TRUE.

Jenny $>$ **Mary**	**Jenny** $\geqq$ **Mary**	**Jenny** $=$ **Mary**
Jenny $<$ **Mary**	**Jenny** $\leqq$ **Mary**	**Jenny** $\neq$ **Mary**

Discussion: All we know is that Mary's collection is less than OR equal to Jenny's collection:

- If Mary's collection is less than Jenny's collection, then Jenny's collection is larger than Mary's collection.

- If Mary's collection is equal to Jenny's collection, then Jenny's collection is equal to Mary's collection.

But since we don't know which, then all we can say is that Jenny's collection is larger than or equal to Mary's collection

Rv **I-9.** Given the data set

$\{0, 1, 2, 3, 4, 5, 6, 7, 8\}$ **Bananas**

and the formula in **Bananas**

$$x \leqq 5$$

What is the solution subset?

Discussion: We try each numerator in the data set:

$1 \leqq 5$ which is TRUE,

$2 \leqq 5$ which is TRUE,

$3 \leqq 5$ which is TRUE,

$4 \leqq 5$ which is TRUE,

$5 \leqq 5$ which is TRUE,

$6 \leqq 5$ which is FALSE,

$7 \leqq 5$ which is FALSE,

$8 \leqq 5$ which is FALSE,

So, the solution subset is

$\{1, 2, 3, 4, 5\}$ **Bananas**

Rv **I-10.** Given the *data set* $\{10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8\}$ **KiloWatts** and the *formula* in **KiloWatts**

$$x \leqq 10.5$$

What is the *solution subset*?

Discussion: We try each numerator in the data set:

$10.1 \leqq 10.5$ which is TRUE,

$10.2 \leqq 10.5$ which is TRUE,

$10.3 \leqq 10.5$ which is TRUE,

$10.4 \leqq 10.5$ which is TRUE,

$10.5 \leqq 10.5$ which is TRUE,

$10.6 \leqq 10.5$ which is FALSE,

$10.7 \leqq 10.5$ which is FALSE,

$10.8 \leqq 10.5$ which is FALSE,

So, the solution subset is

$\{10.1, 10.2, 10.3, 10.4, 10.5\}$ **KiloWatts**

Rv **I-11.** Given the data set

$0, 2, 4, 6, 8$ **Dollars**

and the formula in **Dollars**

$$x \neq 2$$

What is the *solution subset*?

Discussion: We try each numerator in the data set:

$0 \neq 2$ which is TRUE,

$2 \neq 2$ which is FALSE,

$4 \neq 2$ which is TRUE,

$6 \neq 2$ which is TRUE,

$8 \neq 2$ which is TRUE,

So, the solution subset is

$\{0, 4, 6, 8\}$ **Dollars**

Rv **I-12.** Identify 0.37 **Quarts of Milk** + 52.006 **Quarts of Milk**

Discussion: Place both 0.37 **Quarts of Milk** and 52.006 **Quarts of Milk** under a header:

Thousand	Hundred	Ten		Tenth	Hundredth	Thousandth	Quarts of Milk
			0	3	7		
		5	2	0	0	6	

Adding gives

Thousand	Hundred	Ten		Tenth	Hundredth	Thousandth	Quarts of Milk
		5	2	3	7	6	

that is: 52.376 **Quarts of Milk**

Rv **I-13.** Identify 2 **Men** + 5 **Women**

Discussion: The denominators are *not* the same so the number phrases can*not* be added.

Rv **I-14.** Identify $4\sin 2x + 7\sin 2x$

Discussion: The denominators are the same so the number phrases can be added and we get $11\sin 2x$.

Rv **I-15.** Add 4.003 **MegaThings** *to* 31.738 **MegaThings**

Discussion: Place both 4.003 **MegaThings** and 31.738 **MegaThings** under a metric header:

	Mega			Kilo	Hecto	Deka		Deci	Centi	Milli	Things
	4	0	0	3							
3	1	7	3	8							

Adding gives

	Mega			Kilo	Hecto	Deka		Deci	Centi	Milli	Things
3	5	7	4	1							

that is: 52.376 **Things**

Rv **I-16.** Subtract 312.38 **Miles** *from* 8 048.034 **Miles**

Discussion: Place both 8 048.034 **Miles** and 312.38 **Miles** under a header:

Thousand	Hundred	Ten		Tenth	Hundredth	Thousandth	Miles
8	0	4	8	0	3	4	
	3	1	2	3	8		

subtracting gives

Thousand	Hundred	Ten		Tenth	Hundredth	Thousandth	Miles
7	7	3	5	6	5	4	

that is: 7735.654 **Miles**

Rv **I-17.** Subtract 8 000 **Acres** *from* 3 000 **Acres**

Discussion: Cannot be done

Rv **I-18.** Identify [23 **Women**] × [2 **Women**]

Discussion: Cannot be done

Rv **I-19.** Identify 23 × [2 **Women**]

Discussion: 46 **Women**

Rv **I-20.** Identify $[17.4\ \textsf{Miles}] \times [22.6\ \textsf{Miles}]$

Discussion: This is an area: $393.24\ \textsf{SquareMiles}$

Rv **I-21.** Identify the specifying-phrase $[23.3\ \textsf{Gallons of Diesel}] \times \left[3.22\ \frac{\textsf{Dollars}}{\textsf{Gallon of Diesel}}\right]$

Discussion: $75.048\ \textsf{Dollars}$

Rv **I-22.** Given that ***apples*** sell at $6\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, how many ***apples*** can we buy with $50\ \textsf{Dimes}$?

Discussion: For each ***apple*** we want to buy, we must pay SIX ***dimes***. So, we divide 6 into 50 which gives us that we can buy EIGHT ***apples***

Rv **I-23.** Given that we have SIXTY ***dimes***, what is the highest unit price for ***apples*** at which we can buy SEVEN ***apples***?

Discussion:

- If the unit price of ***apples*** is $1\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $7\ \textsf{Dimes}$
- If the unit price of ***apples*** is $2\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $14\ \textsf{Dimes}$
- If the unit price of ***apples*** is $3\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $21\ \textsf{Dimes}$
- If the unit price of ***apples*** is $4\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $28\ \textsf{Dimes}$
- If the unit price of ***apples*** is $5\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $35\ \textsf{Dimes}$
- If the unit price of ***apples*** is $6\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $42\ \textsf{Dimes}$
- If the unit price of ***apples*** is $7\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $49\ \textsf{Dimes}$
- If the unit price of ***apples*** is $8\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $56\ \textsf{Dimes}$
- If the unit price of ***apples*** is $9\ \frac{\textsf{Dimes}}{\textsf{Apple}}$, the price of SEVEN ***apples*** will be $63\ \textsf{Dimes}$

Since we have only $60\ \textsf{Dimes}$, the highest unit price for ***apples*** at which we can buy SEVEN ***apples*** is $8\ \frac{\textsf{Dimes}}{\textsf{Apple}}$

Rv **I-24.** Divide 8 046 by 13 What is the *remainder*?

Discussion: 5

Rv **I-25.** What is the first digit in the quotient in the division of 8 205 by 16?

Discussion: 5