MPM 1D0

Grade 9 Academic Math
Unit 2 – Practice Test B – Using Equations to Solve Problems

Mr. Nolfi

***Victim*: _____**

KU	APP	TIPS	COM
/9	/17	/8	/10

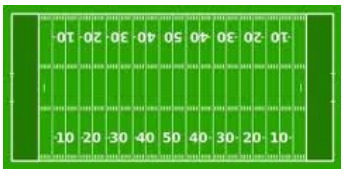
1. Complete the following table: **[6 COM]**

English Phrase or Sentence	***Algebraic Expression or Equation***
(a) Triple a number reduced by ten	
(b)	$5+\frac{n}{4}$
(c) Four less than half a number	
(d) The sum of two consecutive integers is 10001.	
(e) Twice the distance travelled, increased by 9 is 119.	
(f)	$-3(x-5)+4=14$

2. The ***perimeter*** of an NFL football field is exactly 1040 feet. If the length of the field is 2.25 ***times*** longer than the width, find the ***dimensions*** (i.e. length and width) of the field. **[9 KU in total]**

(a) Construct an algebraic model. **(2 KU)**

(b) Translate the problem into an equation. **(2 KU)**



(c) Solve the equation. **(3 KU)**

(d) State a conclusion. **(1 KU)**

(e) Check the solution. **(1 KU)**

3. Rida earns \$0.50 per hour ***more than*** Gurpreet but \$0.25 per hour ***less than*** Sara. Altogether, the three students earn \$49.25 per hour. **[8 APP in total]**

(a) Let g represent Gurpreet's hourly wage. Express Rida's and Sara's hourly wages in terms of g. **(2 APP)**

Student	***Expression Representing Hourly Wage***
Gurpreet	g
Rida	
Sara	

"Wage" = Money that is paid regularly for doing work.

(b) Use the following sentence to write an equation: **(2 APP)**

"Altogether, the three students earn \$49.25 per hour."

(c) Now ***solve your equation*** and ***state a conclusion***. **(4 APP)**

4. Brian is a doghouse "salesperson." He is paid \$12.75 per hour worked ***plus*** \$50.00 per doghouse sold. **[9 APP in total]**

(a) Complete the following table by writing an ***algebraic expression*** for the amount earned in each case. **(3 APP)**

Quantity	***Variable Representing Quantity***	***Amount Earned…***
Number of Hours Worked	t	… for working t hours
Number of Doghouses Sold	n	… for selling n doghouses
Total Earnings (\$)	E	… in total

(b) How much would Brian earn for working for 40 hours and selling 15 doghouses? **(2 APP)**

(c) How many doghouses must Brian sell to earn \$1368.75 for 25 hours of work? **(4 APP)**

5. Naquan is saving nickels and dimes in a jar. The jar contains 10 more nickels than dimes and altogether, the value of the coins is $16.25. How many nickels and dimes are in the jar? **[8 TIPS]**

Nickel = $5^{¢}$ = $0.05

Dime = $10^{¢}$ = $0.10