MPM1D0 Unit 2: Preparing for the "Part B" Test ***Victim:*** _____

1. Give ***one example*** of each of the following: (/5)

/50

(a) Expression _____

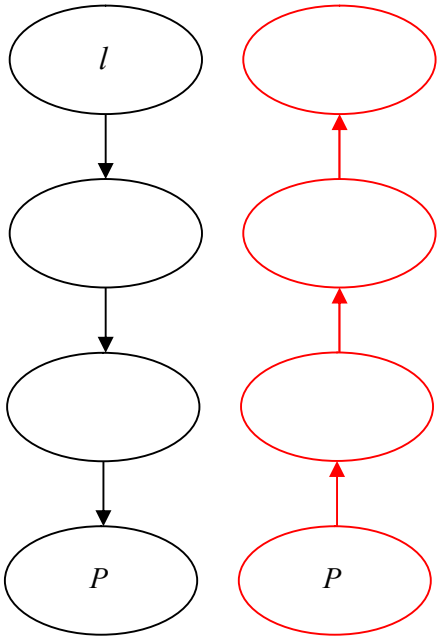
(b) Equation that is Solved for the Unknown _____

(c) Equation that Expresses a Mathematical Relationship _____

(d) Identity _____

(e) A Value that Satisfies the Equation $x^2 = 169$ _____

2. For the given equation, **solve for *l*** both by completing the flowchart and by performing operations to ***both sides***. (/7)

Equation	***Solve for l using the Flowchart***	***Solve the Equation for l by Performing Operations to B.S.***
$P = 2l + 2w$ This equation relates the perimeter of a rectangle to its length and width.		

3. Solve the given equation for *h* by performing operations to both sides. (/4)

$A = 2\pi r^2 + 2\pi rh$

4. To rent the grand ballroom, a hotel charges \$250 per day plus \$15 per person. (/9)

(a) Let C represent the cost in dollars of renting the ballroom and n represent the number of people.

Write a formula that relates C to n.

(b) Use your formula from part (a) to calculate how much the hotel would charge for 100 people to rent the ballroom.

(c) Rearrange your formula to express n in terms of C.

(d) Use your formula from part (c) to calculate how many people attended an event at the ballroom if the total cost turned out to be \$5500.

5. Students in a math class were asked to rearrange the formula $E = \frac{1}{2}mv^2$ to solve for v. A student named Jabroni wrote the response shown in the left column of the table. Unfortunately, Jabroni's response contains many errors. First circle the errors in Jabroni's response. Then provide a correct response. (/8)

Jabroni's Response – Circle all the Errors	***Your Corrected Solution***
$E = \frac{1}{2}mv^2$ $\therefore 2E = \left(\frac{2}{1}\right)\frac{1}{2}mv^2$ $\therefore 2E = \frac{1}{4}mv^2$ $\therefore 2E - \frac{1}{4}m = \frac{1}{4}mv^2 - \frac{1}{4}m$ $\therefore 2E - \frac{1}{4}m = v^2$ $\therefore \frac{2E - \frac{1}{4}m}{2} = \frac{v^2}{2}$ $\therefore \frac{2E - \frac{1}{4}m}{2} = v$ $\boxed{\therefore v = \frac{2E - \frac{1}{4}m}{2}}$	

6. The ***perimeter*** of a rectangle is 280 m. If the length of the rectangle is ***triple*** its width, find the dimensions of the rectangle. (/9)

(a) Construct an algebraic model by using the phrase "the length of the rectangle is ***triple*** its width."

Quantity	*Representation*	*Explanation*
Width		
Length		

(b) Translate the following sentence into an equation. ***Do not solve*** the equation yet! You will do that in part (c).

"The ***perimeter*** of a rectangle is 280 m."

(c) Solve the equation.

(d) State a conclusion.

7. Peter and Homer are saving quarters and loonies in a jar. The jar contains 12 more quarters than loonies and altogether, the value of the coins is $65.50. How many loonies and quarters are in the jar? (/8)

Coin	*Value of One Coin*	*Number of Coins*	*Value of Coins*
Quarters	$0.25	d	
Loonies	$1.00		
Total	N/A		$65.50

1 quarter=25¢=$0.25

1 loonie= $1.00