

MPM 2D
Grade 10 Academic
Unit 4 Group Assignment –
Word Problems
Mrs. Zelewicz
Sem. 1, 2020 version E

9
KU

10
APP

10
Thnk

Student Name: _____ Date: _____

Other Group members' name: _____

Which member would you prefer I mark? _____

Parent/Guardian Signature: _____

- **Read all the instructions carefully**
- **Answer all questions in the space provided, remember that all questions fully solved must be checked.**
- **All student's submissions must have a full response – marking will be done at random**
- **Show all work with proper form for full marks. Ensure you answer all questions asked.**
- **Round all decimals to two decimal places.**

Part 2: Knowledge and Understanding (9 Marks)

For questions 1-2, write only the let statements and the equation, solve questions 3.

1. Two consecutive integers exist such that the sum of triple the smaller number and double the square of the larger number is 3479. Find the integers. **(2 marks)**

Let _____

Equation:

Let _____

2. The length of a rectangle is 5 cm more than the half the width. If the area of the rectangle is 208 cm^2 , find the dimensions of the rectangle. **(2 marks)**

Let _____

Equation:

Let _____

3. Arnold has 36 m of fencing to surround a garden, bounded on one side by the wall of his house. What are the dimensions of the largest rectangular garden that he can enclose? **(5 marks)**

Let _____

Let _____

Equation:

Part 3: Application (10 Marks)

For all questions, **round the final answer to two decimals**

4. A baseball is hit into the air so that its height h , in metres, after t seconds is $h = -6(t - 2.5)^2 + 38.5$

a) What is the maximum height of the ball? When did this occur? **(1 mark)**

b) For how long did the ball remain at least 20 m above the ground? **(2 marks)**

c) After how many seconds did the baseball hit the ground? **(2 marks)**

5. On a journey of 740km, Jim travels at a certain speed for the first 240 km, and then increases his speed by 20km/h for the remainder. If the whole journey takes 8 hours, **determine** his two speeds. **(5 marks)**

Destination	D	S	T

Part 5: Thinking (10 Marks)

6. Last year a banquet hall charged \$30 per person and 60 people attended the hockey banquet dinner. This year the hall's manager has said that for every 10 extra people that attend, they will decrease the price by \$2.00/person. What size group would maximize the profit for the hall this year? How much money would they make? **(5 marks)**

7. A picture that measures 12 cm x 8 cm is to be surrounded by a border before being framed. The width of the border is to be uniform (the same) on all sides of the picture. The area of the border is to be twice the area of the picture. What is the width of the border? What are the new dimensions of the entire picture with the border when it is framed?**(5 marks)**