THE ERINDALE ACADEMY

COURSE NAME: MPM2D – Principles of Mathematics

Unit 1 – System of Linear Equations (Assignment #4: Exploring Linear Systems from 1.1 to 1.7)

Teacher: Antonio Pietrangelo

Time: as needed.

Pages: 10

Student's Name:
Student#:

Due Date: Monday, January 22nd, 23:30pm (EST)

Mark: /100

Categories	Knowledge/ Understanding	Thinking/Inquiry/ Problem Solving	Communication	Application
Symbol	K/U	T/I	C	A
Weight	25 %	25 %	25 %	25 %
Level				

Overall Expectations:

All Overall Expectations as listed in the Ontario Curriculum course outline for your specific course.

Overall Expectations:

1. System of Linear Equations

Specific Expectations:

1.1 Representing Linear Systems.
1.2 Solving Linear Equations.
1.3 Graphically Solving Linear Systems
1.4 Solving Linear Systems: Substitution
1.5 Equivalent Linear Systems
1.6 Solving Linear Systems: Elimination
1.7 Exploring Linear Systems

Key Terms:

1. Slopes of Lines
2. Parallel lines
3. Collinear Lines

4. Point of intersection
5. Algebraic expressions
6. Solving linear equations
7. Increasing / decreasing functions
8. Equivalent equations
9. Equivalent Liner Systems
10. Process of Substitution
11. Process of Elimination

Rubrics:

Category	Level R (0 – 49%)	Level 1 (50-59%)	Level 2 (60-69%)	Level 3 (70-79%)	Level 4 (80-100%)	Level/ Mark
Knowledge – Understanding of: **(Unit/Section - 1.1 to 1.7)**	demonstrates insufficient understanding	demonstrates limited understanding	demonstrates some understanding	demonstrates considerable understanding	demonstrates thorough understanding	
					Individual: **Assigned:**	____

Category	Level R (0 – 49%)	Level 1 (50-59%)	Level 2 (60-69%)	Level 3 (70-79%)	Level 4 (80-100%)	Level/ Mark
Thinking and Inquiry (What if scenarios) of **(Unit/Section - 1.1 to 1.7)**	demonstrates insufficient ability to apply different scenarios	demonstrates limited ability to apply different scenarios	demonstrates some ability to apply different scenarios	demonstrates considerable ability to apply different scenarios	demonstrates through ability to apply different scenarios	
					Individual:	_____

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Category	Level R (0 – 49%	Level 1 (50-59%)	Level 2 (60-69%)	Level 3 (70-79%)	Level 4 (80-100%)	Level/ Mark
Communication **Communicates effectively with the use of (Unit/Section: 1.1 to 1.7)**	demonstrates **insufficient** ability to communicate effectively	demonstrates **limited** ability to communicate effectively	demonstrates **some** ability to communicate effectively	demonstrates **considerable** ability to communicate effectively	demonstrates **through** ability to communicate effectively	
					Individual:	_____

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Category	Level R (0 – 49%	Level 1 (50-59%)	Level 2 (60-69%)	Level 3 (70-79%)	Level 4 (80-100%)	Level/ Mark
Application: Demonstrates the ability to implement and apply linear relations in many forms like tables, graphics and algebraically: **(Unit/Section: 1.1 to 1.7)**	demonstrates **insufficient ability**	demonstrates **limited ability**	demonstrates **some ability**	demonstrates **considerable ability**	demonstrates **thorough ability**	
					Individual:	_____

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PART A: KNOWLEDGE AND UNDERSTANDING (K/U) – 25%

2 Marks Per Question

Instructions:

Question 1: A linear system has a solution when there is no point of intersection? (True or False)

Question 2: These two equations are collinear equations: y=3x, y=6x? (True or False)

Question 3: What is the slope of these two points A(3, 6), and B(5, 9)?

Question 4: Find the y-intercept of y = 2x + 4?

Question 5: The equation 4x + 2y = 2 has a slope of 2? (True or False)

PART B: THINKING AND INQUIRY (T/I) – 25 %

5 Marks Per Question

Show your work:

Question 1: How many solutions does system of linear equations have? Solve each system of linear equations algebraically.

$2x + 3y = -4$
$-4x - 3y = -1$

Question 2: How many solutions does system of linear equation have? Solve each system of linear equations algebraically.

$x - y = 5$
$3x = 15 + 3y$

PART C: COMMUNICATION (C) – 25%

10 Marks Per Question

Question 1: Explain what type of linear systems are these three pairs of equations.

Pair 1:	Pair 2:	Pair 3:
2x + 3y = -4 -4x - 3y = -1	3x + 2y = 6 6x + 4y = 5	x – y = 5 3x – 3y = 15

Step 1: Graph each pair of linear systems on separate graphs

Step 2: What is the point of intersection of each pair of equations

Step 3: What is your conclusion and observation of these system of linear equations.

Student Response:

PART D: APPLICATION (A) – 25%

10 Marks Per Question

Question 1:

Solve the linear equations:

1. **6x + 5y = 10**
2. **ax + 2y = b**

Find the values of a, b so that the system of linear equations has an infinite number of solutions.