THE ERINDALE ACADEMY

COURSE NAME: MPM2D – Principles of Mathematics

Unit 1 – System of Linear Equations (Assignment #2: Topics from 1.1 to 1.7)

Teacher: Antonio Pietrangelo

Time: as needed.

Pages: 10

Student's Name:
Student#:

Due Date: Thursday, January 18th, 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:	_____

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 linear relation properties and solutions in many forms: **(Unit/Section: 1.1 to 1.7)**	demonstrates **insufficient ability**	demonstrates **limited ability**	demonstrates **some ability**	demonstrates **considerable ability**	demonstrates **thorough ability**	
T					**Individual:**	____

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

2 Marks Per Question

Instructions:

Question 1: Linear systems have a solution when there is a point of intersection (True or False)?

Question 2: Equations: y=2x, y=2x +1 have a solution? (True or False)

Question 3: Half of a value decreased by 7 is equal to 1 is represented by the equation: $\frac{1}{2}x - 7 = 1$? (True or False)

Question 4: The algebraic expression for twice the distance can be represented by: expression 3d? (True or False)

Question 5: What is the opposite of increasing function?

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

5 Marks Per Question

Question 1: Graph the linear system and find the point of intersection:

$y = x + 1$

$y = -\frac{1}{2}x + 2$

Question 2: **Which of the following are equivalent linear equations?**

$y - x + 5 = 0$

$y = 3x + 15$

$2y = 2x - 10$

PART C: COMMUNICATION (C) – 25%

10 Marks Per Question

Question 1: . Hank sells furniture and earns $280/week plus 4% commission.

a) Determine the sales that Hank needs to make to meet his weekly budget requirement of $900.

b) Write an equation for this situation, and use it to verify your answer for part a).

3) Place the equation on a graph, and explain what type of relationship is this relationship between weekly budget and sales.

Student Response:

PART D: APPLICATION (A) – 25%

10 Marks Per Question

Solve an Internet Cost Problem.

Graphing and process of elimination:

Brian and Catherine are to get internet access for their home. There are two companies in the same area providing internet access.

The first company, IT Plus, charges a flat fee of $25 / month for unlimited use.

The second company, Techies Inc. charge $10/month plus $1 / hour for use.

If Brian and Catherine expect to use the internet for approximately 18 hours / month, which plan is the better option for them.

Find the equations or algebraic relations for both companies.

Find the point of interaction.

Draw the graphs of both lines.

Explain when is it cheaper or more expense of each plan.