MPM 1D Learning Goals & Success Criteria
Unit 4 Test 1 – Modelling with Graphs

Learning Goals

I will be able to:

- demonstrate an understanding of the characteristics of a linear relation. (LR2)
- make connections between various representations of linear relations (distance time graphs). (LR3)
- determine the relationship between the forms of an equation and the slope of its graph. (AG1)
- determine the properties of the slope and y – intercept of a relation. (AG2)
- solve problems involving linear relations. (AG3)

Success Criteria

I can:

- Compare the properties of direct variation and partial variation in applications and identify the initial value for a relation.
- Determine values for a linear relation using a table of values, equation, or graph.
- Find other representations for linear relations given one representation.
- Explain the characteristics that distinguish a linear relationship from a non-linear relationship.
- Identify the equation of a line in slope-y-intercept form and standard form, as well as equations for horizontal and vertical lines.
- Rearrange standard form to slope-y-intercept form and vice versa.
- Find the slope of a line using a variety of methods.
- Explain the geometric significance of m and b in the equation y = mx + b.
- Make connections between the various representations of the constant rate of change of a linear relation.
- Graph lines by hand using a variety of techniques.
- Determine the equation of a line given some information about the line.
- Describe the meaning of the slope and the y-intercept for a linear relationship arising from a real-world situation, and describe a situation that could be modelled using a linear equation.
- Identify and explain any restrictions on the variables when working with a real-world situation.
- Determine the point of intersection of two linear relations graphically and interpret the meaning of this point.

Test Information:

Your test is Friday, January 15th. **You have 90 minutes to complete it**. The more prepared you are, the less stressed you will feel about time! Part 1 of the test will be completed in Edsby and will cover the LR learning goals (Chapter 5). Part 2 will be written and must be submitted as a single PDF document in the allotted time frame. **Please report any technical issues to me immediately!**

There is a more detailed test outline below. Please refer to that while you study.

To study:

- Review your notes (and redo the examples) while you complete some form of review organizer/study note.
- Use the questions to expect and the review handout to practice your skills.

Questions to Expect

Part 1

- Identify the type of variation for a given representation of a linear function and explain what you look for to decide.
- State the initial value and rate of change for relations in various forms.
- Create other representations for a linear relation given one (for example, if I give you an equation, make a table and description).
- Determine values for a linear relation using various representations (for example, how much money would it cost to have 200 guests at a banquet and you would be given an equation or a graph or a table).

Part 2

- Correct an incorrect solution.
- Explain what 'm' and 'b' represent in a linear equation of the form y = mx + b.
- Explain how slope allows you to identify parallel or perpendicular lines.
- Rearrange equations into standard or slope y-intercept form.
- Find the x and y intercepts for a line.
- Graph lines using slope and y-intercept and using intercepts.
- Write equations of lines given information (slope and a point, two points, etc.)
- State the solution to a linear system of equations given a graph.

Suggested Review: Unit 4 Review Handout

Extra Text book stuff: p. 288 #7 – 10, 13, 15, 16; p. 290 #1, 3 – 6, 8 – 10; p. 352 #1 – 13, 15; p. 354 #1 – 5, 7 – 10, 12 (use this to practice specific things you need more work on.)

Notes: Please study. Do the review, but more importantly review your notes & quizzes, make notes, etc. If you need help, let me know and we will set up a Teams meeting for individual/small group review at lunch or after school.