MPM 1DI - **Final Exam Review**

Textbook Collection
Your textbook will be collected on the day of the exam in your examination Room _____ (10 min. before the exam starts).
Be prepared to pay the replacement cost if you have lost your textbook.

Dates to Remember:

Final Exam   June 22, 2012 at 8:30 am in Room _____

Topics that may be covered on the Final Exam include:

Chapter 2 – Relations
- ❏ Draw and Interpret Scatter Plots
  - o Strength of relationship between two variables
  - o Make predictions about values inside (interpolate) and outside (extrapolate) the range of values for the independent variable
  - o Positive/Negative Correlation
  - o Weak/Strong Correlation
  - o Lines of Best Fit
- ❏ Sampling Principles
  - o sampling methods
  - o bias
- ❏ Sources of Data
- ❏ Linear vs. Non-Linear Relations
- ❏ Distance-Time Graphs
  - o draw a graph given a story or write a story given a graph
  - o interpret information from a graph

Chapter 3 – Polynomials
- ❏ Exponent Laws
  - o What are the different exponent laws?
  - o Powers with rational bases
  - o Simplify expressions using exponent laws
  - o Evaluate expressions using exponent laws
- ❏ Adding / Subtracting Polynomials
  - o Identify like terms and simplify
- ❏ Expand
  - o Apply the Distributive Property
  - o Use Exponent Laws when necessary
- ❏ Simplifying Algebraic Expressions
  - o Collect like terms after expanding
  - o Simplify more complex expressions
- ❏ Word Problems

Chapter 4 – Equations
- ❏ Solve equations
  - o simple equations
  - o multi-step equations
  - o equations with fractions
- ❏ Modelling with formulae
  - o rearrange formulae

Chapter 5 – Modelling with Graphs
- ❏ Partial vs Direct Variation
- ❏ Slope
  - o rate of change
- ❏ First Differences
  - o to determine if a relation is linear or non-linear
  - o find the slope and y-intercept if relation is linear
  - o find the equation of a linear relation

Chapter 9 – Optimizing Measurements
- ❏ 2-D 4-sides or 3-sides fenced
  - o minimize perimeter given the area
  - o maximize area given the perimeter
- ❏ 3-D square-based prism or cylinder
  - o minimize surface area given volume
  - o maximize volume given surface area

Chapter 6 – Analyse Linear Relations
- ❏ Graphing
  - o table of values
  - o slope y-intercept method
  - o intercept method
- ❏ Graphing – identifying the slope and intercepts on a graph
- ❏ Graphing – to find the point of intersection
- ❏ Equations of lines
  - o how to find the equation from the graph
  - o how to determine if the relation is linear or non-linear
  - o find the equation given slope and one point
  - o find the equation given slope and the y-intercept
  - o find the equation given two points
  - o find the equations of parallel and perpendicular lines
  - o find the equations of vertical and horizontal lines
- ❏ Standard Form of a Linear Equation
  - o $Ax + By + C = 0$
  - o Identify restrictions on A, B, and C
  - o Identify the slope & y-intercept
- ❏ Problem Solving and Linear Equations
  - o Find the point of intersection by graphically and algebraically (LS/RS check as well)
- ❏ Formal Checks (LS/RS)
- ❏ Finding Values that satisfy a Linear Relationship
- ❏ Rearranging the Equation of a Line

Chapter 7 – Geometric Relationships
- ❏ Angle Properties of Parallel Lines (Transversal)
  - o Using counter examples to disprove a relationship
  - o Alternate Angles, Corresponding Angles and Co-Interior Angles
- ❏ Complements, Supplements, Vertically Opposite
- ❏ Angles Associated with Triangles
  - o Sum of Interior Angles of a Triangle
  - o Exterior of an Angle (Remote Interior Angles)
  - o Sum of the Exterior Angles
- ❏ Angles and Polygons
  - o Sum of the interior angles of a polygon
  - o Sum of the exterior angles of a polygon
  - o Regular polygons – equal side lengths and angles
- ❏ Triangle Properties
  - o Midpoints and medians

Chapter 8 – Measurement Relationships
- ❏ Pythagorean Theorem
- ❏ Area of Composite Figures and Regular Polygons
  - o Area of rectangles, circles, triangles, squares, polygons
  - o Finding area by adding or subtracting regular shapes
  - o Choose the appropriate formula and substitute correctly
- ❏ Volume
  - o Prisms, Cylinders, Cones, Pyramids & Spheres
  - o Choose the appropriate formula and substitute correctly
  - o Calculate wasted space, capacity in liquid measures
- ❏ Surface Area
  - o Prisms, Cylinders, Cones, Pyramids & Spheres
  - o Choose the appropriate formula and substitute correctly
  - o Find slant height
  - o Packaging requirements