1. Section 1.1, 1.2, 1.3 - Functions and their graphs

   (a) x-intercepts, y-intercepts: location, definition (p. 146, *Intercepts*).

   (b) (*****) Functions: relations, definition of a function, determining if a relation is a function.

   (c) Domain, range: definition, expressing it in mathematical terms, interpretation.

   (d) Graphing: ordered pairs, Cartesian co-ordinates, vertical line test.

   (e) Reading graphs: determining domain, range, if the graph is of a function.

   (f) Reading graphs II: properties such as increasing, decreasing, constant, even, odd.

   (g) Reading graphs III: determining intercepts, maxima, minima.

   (h) (*****) Piecewise function: reading them, graphing them, creating them.

   (i) Difference quotients: definition, resolving them.

2. Section 1.4, 1.5 - Linear functions

   (a) Forms of a line: point-slope, slope-intercept, general.

   (b) Special cases: horizontal and vertical lines.

   (c) Slope: definition, interpretation, parallel, perpendicular slopes.

   (d) (*****) Finding the equation of lines from various set-ups (two points, point and a slope, point and another line and a qualitative relationship (parallel/perpendicular)).

   (e) Meaning of slope: average rate of change, units in terms of units of x and units of y.

3. (*****) Section 1.6 - Transformations of functions

   (a) Expressing a new function that is a transformation of a previous function from reading the graph.

   (b) Graphing a new function that is a transformation of a previous function from reading an equation.

4. Section 1.7 - Algebra of functions, composition

   (a) Domain: determining the domain of a new function built from more basic functions.

   (b) Operations between functions: $f + g, f - g, f \cdot g, \dfrac{f}{g}$.

   (c) (*****) Composition: expressing the composition $f \circ g$, determining domain.

   (d) Decomposition: rewriting a function as the composition of two simpler functions.

5. Section 1.8 - Inverse functions

   (a) Definition, finding the inverse, the one-to-one (*injective*) property.

   (b) (*****) Graphs: graphing the inverse relative to the original function.

   (c) Restricting the domain of a function to produce an inverse function.

6. Section 1.9 - Distance, midpoint, circles

   (a) Distance: derivation, using it correctly.

   (b) Midpoint: definition/derivation.

   (c) Circles: definition/derivation, finding the equation of a circle given radius and center.

   (d) Circles II: going from standard form to general form and vice versa via *completing the square*, graphing circles.

7. Section 1.10 - Modeling

   (a) The core idea of this section is to think in an organized way. Determine unknowns, construct functions to represent unknowns, and think about what the functions represent to deduce answers.