

Review for Test 1: Sections 1.1 – 1.8

Note: ONLY non-CAS calculators will be allowed on the exam. You may not share a calculator with other students during the exam so be sure to bring your own.

Assigned problems:

Page 60: 1, 6 ($f(x) = (x-1)(x-5)(x-7)$), 7, 8 ($y = \cos(t)$), 9, 10 ((a) $C = .12w + 4.16$;
(b) $m = \$0.12$ per gallon, cost per gallon of trash collected; (c) $\$4.12 =$ base cost (no trash collected)),
12 (f: 15, 25, 30; g: $10\sqrt{2}, 20\sqrt{2}, 40$), 19, 21, 46 (yes), 47, 49, 50, 52 ((a) increasing a increases the y -int.; (b) increasing a has no effect on the x -intercept), 55, 57, 67.

Page 65: 1, 7, 8 (True), 9, 31, 34, 57, 49, 50 (False), 55, 56 (False), 57

Concepts:

- Given a set of data (t-chart/table of values)
 - Determine whether the function represented by the table is
 - Linear
 - Exponential
 - Quadratic
 - Sinusoidal
 - Fill in missing values in the table
- Find a formula for a linear, exponential (both forms) or a sinusoidal function
- Interpret function notation in practical terms, using units.
- Interpret a slope as a rate of change, in practical terms, using units.
- Know the parent graphs of the following types and explain the effect of parameters on the graph
 - Power functions
 - Exponential functions
 - Log functions
 - Cosine and Sine functions
- Know the relationship between limits as x tends toward infinity and horizontal asymptotes
- Find limits, including left-hand and right-hand limits, at a point, using a graph, a table of data or algebra.
- Know the properties of limits.
- Determine points of discontinuity of a function from its graph or formula
- Know the FORMAL definition of continuity and be able to explain why a function is discontinuous at a point in terms of this definition.
- Given a piecewise-defined function, determine the value of a parameter in order to make the function continuous.