

Name:

This quiz covers: 1.1, 1.2, 1.3 and 1.5.

Directions: Complete all questions and **show all applicable work.** Partial credit will be given. All questions are equally weighted.

1.) Find the domain and range of the following function:

$$f(x) = \sqrt{x-1} + 5$$

2.) Given the function $f(x) = -2e^{x-1} + 3$, starting with the function \sqrt{x} , describing how each successive transformation (the -2, -1, and 3) changes the curve.

3.) Red wigglers are worms used in home-based composting. By digesting paper and food waste instead of sending it to the landfill, they provide an green alternative for waste reduction. Well fed worm populations generally double in weight every 90 days and they consume half their weight everyday. If you purchase one pound of worms, (A) write a function that approximates their population assuming they are well fed. (B) What will the populations weight be in 50 days? How much will they consume in 50 days?