Skills Practice

Name _____ Date _____

I. Modeling with Quadratic Functions

A. Write a quadratic function, *A(w),* that represents each area as a function of the width, *w.* Remember to define your variables. If an area is to be enclosed on three sides, one length does not have fencing.

1. A builder is designing a rectangular parking lot. She has 300 feet of fencing to enclose the parking lot around three sides.

2. Aiko is enclosing a new rectangular flower garden with a rabbit garden fence. She has 40 feet of fencing

3. Pedro is building a rectangular sandbox for the community park. The materials available limit the perimeter of the sandbox to at most 100 feet.

4. Lea is designing a rectangular quilt. She has 16 feet of piping to finish the quilt around three sides.

5. Kiana is making a rectangular vegetable garden alongside her home. She has 40 feet of fencing to enclose the garden around the three open sides.

6. Nelson is building a rectangular ice rink for the community park. He has enough materials to construct a perimeter of 250 feet.

Write a function that represents the vertical motion described in each problem situation.

1. A catapult hurls a watermelon from a height of 36 feet at an initial velocity of 82 feet per second.

2. A catapult hurls a cantaloupe from a height of 12 feet at an initial velocity of 47 feet per second.

3. A catapult hurls a pineapple from a height of 49 feet at an initial velocity of 110 feet per second.

4. A basketball is thrown from a height of 7 feet at an initial velocity of 58 feet per second.