Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Block: \_\_\_\_\_\_\_

Algebra 2 H Spiral 12 - Review

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| Applications of Quadratics |
| 1. The seniors decided it would be lots of fun to launch stuffed animals from the atrium up to the second floor landing. They borrowed a catapult from Mr. Avigian! The second floor landing is 54 feet high. If the initial velocity of the stuffed animal is 40 ft/s and the projectile is launched from a height of 3 feet, answer the following questions:
2. Write an equation to model the height of the stuffed animal. $h\left(t\right)=-16t^{2}+v\_{o}t+h\_{o}$
3. Can the catapult launch the stuffed animals up onto the landing? Show your work!
4. If they want to hit the 10th stair on the staircase (which is 15 feet high), how long does it take for the stuffed animal to hit the stair?
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| Exponent Rules  |
| 1. Simplify completely (no negative exponents)

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| Polynomial Basics  |
| 1. Simplify the expression below.a.

b. | 1. Sketch a graph of this polynomial:

  Describe the end behavior: as  ,  as  |
| Polynomial Division and Special Factoring  |
| 1. Find the quotient.

a. Is x2-2 a factor of ?b.Is x = 2 a zero of ? | 1. Factor completely:

a. b.  |