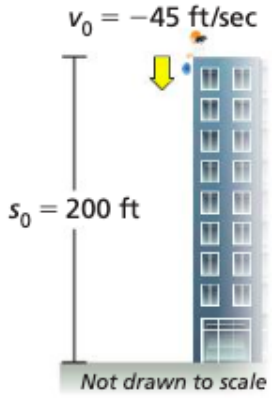
Name: Date: Hour:

Algebra 1
WS 7.3B Polynomial Application Practice
(Add, Subtract, Multiply)

The polynomial $-16t^2 + v_0t + s_0$ represents the height (in feet) of an object, where $v_0$is the initial vertical velocity (in feet per second), s_0 is the initial height of the object (in feet), and t is the time (in seconds).

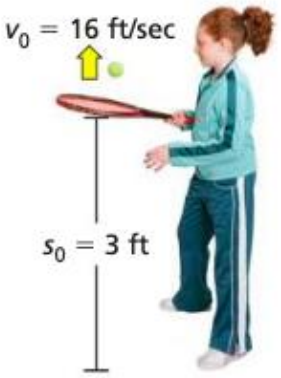
1. You throw a water balloon from the top of a building.
   a. Write a polynomial to represent the height of the object after t seconds.

   b. How high is the object after 1 second?

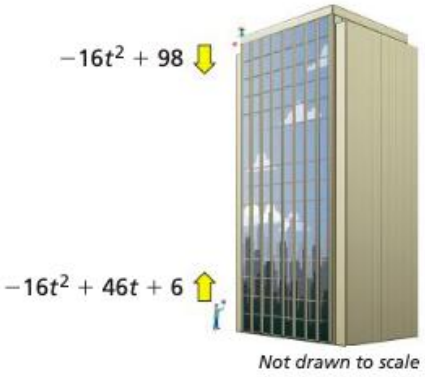


2. You bounce a tennis ball on a racket.
   a. Write a polynomial to represent the height of the object after t seconds.

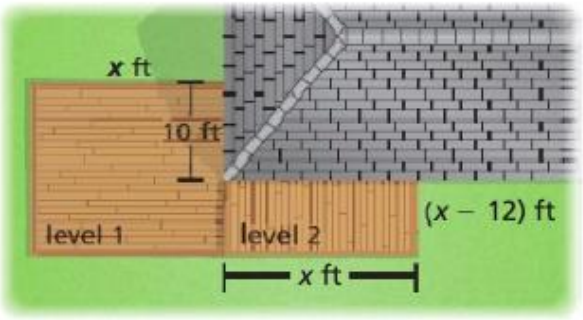
   b. How high is the object after 1 second?



3. You drop a ball from a height of 98 feet. At the same time, your friend throws a ball upward. The polynomials represent the heights (in feet) of the balls after t seconds. Write a polynomial that represents the distance between your ball and your friend's ball after t seconds.



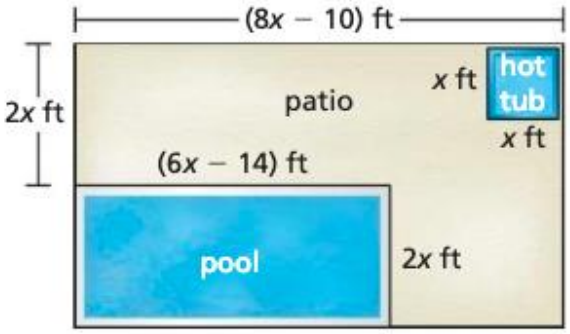
4. You are building a multi-level deck.
   a. For each level, write a polynomial in standard form that represents the area of that level. Then write a polynomial in standard form that represents the total area of the deck.



   b. What is the total area of the deck when $x = 20$?

   c. A gallon of deck sealant covers 400 square feet. How many gallons of sealant do you need to cover the deck in part (b) once? Explain.

5. A hotel installs a new swimming pool and a new hot tub.
   a. Write a polynomial in standard form that represents the area of the patio.



   b. The patio will cost $10 per square foot. Determine the cost of the patio when $x = 9$.