Based on the above information, answer the following questions.

(i) If the Arch is represented by $10x^2 - x - 3$, then find its zeroes. (2)

(ii) Find the quadratic polynomial whose sum of zeroes is 0 and product of zeroes is 1. (2)

OR

(ii) Find the sum and product of zeroes of the polynomial $\sqrt{3}\,x^2 - 14x + 8\sqrt{3}$ (2)

20. The figure given alongside shows the path of a diver, when she takes a jump from the diving board. Clearly it is a parabola. Annie was standing on a diving board, 48 feet above the water level. She took a dive into the pool. Her height (in feet) above the water level at any time 't' in seconds is given by the polynomial h(t) such that $h(t) = -16t^2 + 8t + k$.

(i) What is the value of k? (2)

(ii) At what time will she touch the water in the pool? (2)

OR

(ii) Rita's height (in feet) above the water level is given by another polynomial p(t) with zeroes -1 and 2. Then find p(t) (2)