**7.5 Application of Quadratic Functions and Equations**

\*A jumping spider jumps from a log onto the ground below. It’s height, *h*, in centimetres, as a function of time, *t*, in seconds, can be modeled by h(t) = -490t2 + 75t + 12

(a) What does the h-intercept represent?

(b) What does the t-intercept(s) represent?

(c) When does the spider reach its maximum height? What is its maximum height?

\*Two numbers have a difference of 18. The sum of their squares is a minimum. Determine the numbers.

\*A rectangular play area is to be bounded by 120 metres of fencing. Determine the maximum area and the dimensions of this rectangle.