**2H Modelling with Quadratics**

1. A spear is thrown over level ground from the top of a tower. The height, $h$, in metres, of the spear above the ground after $t$ seconds is modelled by the function:

$$h\left(t\right)=12.25+14.7t-4.9t^{2},  t\geq 0$$

1. Interpret the meaning of the constant 12.25 in the question
2. After how many seconds does the spear hit the ground?
3. Write $h(t)$ in the form $A-B(t-C)^{2}$, where $A$, $B$ and $C$ are constants to be found.
4. Using your answer to part c), or otherwise, find out the maximum height of the spear, and when it reaches this height