To do these exercises you may need to “look things up”. Remember that google is your best friend.

**Exercise 1**
Write a function to solve the quadratic equation \( ax^2 + bx + c = 0 \). “Protect” the function against the passing of invalid arguments. Decide what to do when the equation has no real solutions.
Use this function to find the times at which a ball thrown upward from the ground with a velocity of 20 m/sec reaches a height of 10 m, 15 m, and 25 m as it travels upward.

**Exercise 2**
Write a program that asks to input a positive integer \( n \geq 0 \) and prints out \( n! \).
Protect your code against illegal inputs.
Also, check Stirling’s approximation
\[
\log(n!) \approx \left(n + \frac{1}{2}\right) \log n - n + \frac{1}{2} \log 2\pi \text{ for large } n.
\]