Nested `if` Statements

Nested Ifs

1. Have the user enter a positive integer. Print one message if the value is between 12 and 15 (inclusive), and a different message if it is not. Used nested `if` statements to achieve this.
2. Modify your program in Q2 so that it does not use nested `if` statements, only elif and `else`.
3. Ask the user to enter an integer. If it is positive, ask the user to enter a second integer. If it is also positive, find their product. For all other cases, print a "goodbye" message.
4. Garvin's Electronics Emporium is having a sale on TVs. All 4K TVs have a flat 15% discount, while LCD TVs are discounted according to their screen size:
   - less than 40 inches: 10% off
   - 40-50 inches: 20% off
   - greater than 50 inches: 25% off

   Have the user enter the price of the TV, and its type. If it is an LCD TV, obtain the screen size as well. Calculate the sale price of the TV, before taxes.
5. Determine the real root(s) to a quadratic equation, $ax^2+bx+c=0$, where the user enters the values of *a*, *b* and *c*. If there are no real roots, display a message (prevent the run-time error). Otherwise, display the one or two possible solutions. Hint: what part of the quadratic formula, $x=\frac{-b\pm\sqrt{b^2-4ac}}{2a}$, determines the number of real roots?
6. Determine if a user-entered year is a leap year. Leap years are divisible by 4, but not by 100, UNLESS they are also divisible by 400. For example, 1952 and 2000 were leap years, but 1867 and 1900 were not. Used nested `if` statements to achieve this.
7. Rewrite your code from Q6 so that it does not use nested `if` statements.