Roots of Unity

1. a) Find an equation that gives the arguments of all fourth roots of unity.
    b) Write down all fourth roots of unity in Cartesian form.
    c) Plot the fourth roots of unity on the Argand diagram.
2. a) Find an equation that gives the arguments of all fifth roots of unity.
    b) Write down all fifth roots of unity in Euler's (exponential) form.
    c) Plot the fifth roots of unity on the Argand diagram.
3. a) Find an equation that gives the arguments of all n^{th} roots of unity.
    b) Describe what you would expect to observe if you were to plot the nth roots of unity on the Argand diagram.