

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 n^{th} roots of unity on the Argand diagram.