Notes:

* The job of a certificate authority is to assist in validating the identity of different websites and devices before administering digital certificates to them
* A certificate authority takes the user’s public key and information and then creates a digital certificate
* The certificate is signed by the CA with its private key
* The user can present the signed certificate to a server, who can then trust that the user is who they claim to be
* A Root CA is a certificate authority that can be used to issue other certificates

Free web certificate authorities:

* Let’s Encrypt
* ZeroSSL
* Cloudflare
* SSL for Free

Setup:

* Log into domain controller with administrator privileges
* Open Server Manager, click Manage, and select Add Roles and Features
* In Server Roles, select Active Directory Certificate Services
* Make sure Certification Authority and Certification Authority Web Enrollment are both checked
* Click next and install
* Open AD CS Configuration and click next
* Check the boxes for Certification Authority and Certification Authority Web Enrollment and click next
* Select Enterprise CA and click next
* Select Root CA and click next
* Select Create a new private key and click next
* Keep default options for the rest of the options and click Configure to finish