Assessment 1

Question 1

Creating the User

1. Create a private key.
2. Create and approve a CertificateSigningRequest.
3. Add a context entry named johndoe to the kubeconfig file to represent the user.

For detailed information, see the Kubernetes documentation.

Checking Default User Permissions

1. Change to the context to johndoe.
2. Create a new Pod. What would you expect to happen?

Granting Access to the User

1. Switch back to the original context with admin permissions.
2. Create a new Role named pod-reader. The Role should grant permissions to get, watch and list Pods.
3. Create a new RoleBinding named read-pods. Map the user johndoe to the Role named pod-reader.
4. Make sure that both objects have been created properly.
5. Switch to the context named johndoe.
6. Create a new Pod named nginx with the image nginx. What would you expect to happen?
7. List the Pods in the namespace. What would you expect to happen?

Question 2

A new application finance-audit-pod is deployed in finance namespace. Find out what is wrong with it and fix the issue.
NOTE: No configuration changes allowed, you can only delete or recreate the pod.
Below command will create a scenario for us:
g create ns finance ; g run finance-audit-pod --image=busybox -n finance --command sleeo 180

Question 3

Reconfigure the existing deployment front-end and add a port specification named http exposing port 80/tcp of the existing container nginx.
Create a new service named front-end-svc exposing the container port http.
Configure the new service to also expose the individual Pods via a NodePort on the nodes on which they are scheduled.

Question 4

Create a Persistent Volume with the given specification.
Volume Name: pv-analytics, Storage: 100Mi, Access modes: ReadWriteMany, Host Path: /pv/data-analytics

Create corresponding Persistent volume claim and Storage Policy.