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| Question | You are developing an application to use Azure Blob storage. You have configured Azure Blob storage to include change feeds. A copy of your storage account must be created in another region. Data must be copied from the current storage account to the new storage account directly between the storage servers. You need to create a copy of the storage account in another region and copy the data. In which order should you perform the actions? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | To move a storage account, create a copy of your storage account in another region. Then, move your data to that account by using AzCopy, or another tool of your choice. The steps are: ✑ Export a template. ✑ Modify the template by adding the target region and storage account name. ✑ Deploy the template to create the new storage account. ✑ Configure the new storage account. ✑ Move data to the new storage account. ✑ Delete the resources in the source region. Note: You must enable the change feed on your storage account to begin capturing and recording changes. You can enable and disable changes by using Azure Resource Manager templates on Portal or Powershell. Reference: https://docs.microsoft.com/en-us/azure/storage/common/storage-account-move <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-change-feed> |

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| Question | You are developing an ASP.NET Core web application. You plan to deploy the application to Azure Web App for Containers. The application needs to store runtime diagnostic data that must be persisted across application restarts. You have the following code:    You need to configure the application settings so that diagnostic data is stored as required. How should you configure the web app"™s settings? To answer, select the appropriate options in the answer area. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Box 1: If WEBSITES\_ENABLE\_APP\_SERVICE\_STORAGE If WEBSITES\_ENABLE\_APP\_SERVICE\_STORAGE setting is unspecified or set to true, the /home/ directory will be shared across scale instances, and files written will persist across restarts  Box 2: /home - Reference: <https://docs.microsoft.com/en-us/azure/app-service/containers/app-service-linux-faq> |

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| Question | You are developing a web app that is protected by Azure Web Application Firewall (WAF). All traffic to the web app is routed through an Azure Application Gateway instance that is used by multiple web apps. The web app address is contoso.azurewebsites.net. All traffic must be secured with SSL. The Azure Application Gateway instance is used by multiple web apps. You need to configure the Azure Application Gateway for the web app. Which two actions should you perform? |
| Answer | **A.**In the Azure Application Gateway"™s HTTP setting, enable the Use for App service setting.  **B.**Convert the web app to run in an Azure App service environment (ASE).  **C.**Add an authentication certificate for contoso.azurewebsites.net to the Azure Application Gateway.  **D.**In the Azure Application Gateway"™s HTTP setting, set the value of the Override backend path option to contoso22.azurewebsites.net. |
| Explanation | * D: The ability to specify a host override is defined in the HTTP settings and can be applied to any back-end pool during rule creation. The ability to derive the host name from the IP or FQDN of the back-end pool members. HTTP settings also provide an option to dynamically pick the host name from a back-end pool member's FQDN if configured with the option to derive host name from an individual back-end pool member. A (not C): SSL termination and end to end SSL with multi-tenant services. In case of end to end SSL, trusted Azure services such as Azure App service web apps do not require whitelisting the backends in the application gateway. Therefore, there is no need to add any authentication certificates.   Reference: <https://docs.microsoft.com/en-us/azure/application-gateway/application-gateway-web-app-overview> |

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| Question | You are implementing a software as a service (SaaS) ASP.NET Core web service that will run as an Azure Web App. The web service will use an on-premises SQL Server database for storage. The web service also includes a WebJob that processes data updates. Four customers will use the web service. ✑ Each instance of the WebJob processes data for a single customer and must run as a singleton instance. ✑ Each deployment must be tested by using deployment slots prior to serving production data. ✑ Azure costs must be minimized. ✑ Azure resources must be located in an isolated network. You need to configure the App Service plan for the Web App. How should you configure the App Service plan? |
| Answer |  |
| Explanation | Number of VM instances: 4 - You are not charged extra for deployment slots.  Pricing tier: Isolated - The App Service Environment (ASE) is a powerful feature offering of the Azure App Service that gives network isolation and improved scale capabilities. It is essentially a deployment of the Azure App Service into a subnet of a customer"™s Azure Virtual Network (VNet). Reference: <https://azure.microsoft.com/sv-se/blog/announcing-app-service-isolated-more-power-scale-and-ease-of-use/> |

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| Question | You are a developer for a software as a service (SaaS) company that uses an Azure Function to process orders. The Azure Function currently runs on an Azure Function app that is triggered by an Azure Storage queue. You are preparing to migrate the Azure Function to Kubernetes using Kubernetes-based Event Driven Autoscaling (KEDA). You need to configure Kubernetes Custom Resource Definitions (CRD) for the Azure Function. Which CRDs should you configure? To answer, drag the appropriate CRD types to the correct locations. Each CRD type may be used once, more than once, or not at all. |
| Answer |  |
| Explanation | Box 1: Deployment - To deploy Azure Functions to Kubernetes use the func kubernetes deploy command has several attributes that directly control how our app scales, once it is deployed to Kubernetes.  Box 2: ScaledObject - With --polling-interval, we can control the interval used by KEDA to check Azure Service Bus Queue for messages. Example of ScaledObject with polling interval apiVersion: keda.k8s.io/v1alpha1 kind: ScaledObject metadata: name: transformer-fn namespace: tt labels: deploymentName: transformer-fn spec: scaleTargetRef: deploymentName: transformer-fn pollingInterval: 5 minReplicaCount: 0 maxReplicaCount: 100  Box 3: Secret - Store connection strings in Kubernetes Secrets. Example: to create the Secret in our demo Namespace: # create the k8s demo namespace kubectl create namespace tt # grab connection string from Azure Service Bus KEDA\_SCALER\_CONNECTION\_STRING=$(az servicebus queue authorization-rule keys list \ -g $RG\_NAME \ --namespace-name $SBN\_NAME \ --queue-name inbound \ -n keda-scaler \ --query "primaryConnectionString" \ -o tsv) # create the kubernetes secret kubectl create secret generic tt-keda-auth \ --from-literal KedaScaler=$KEDA\_SCALER\_CONNECTION\_STRING \ --namespace tt Reference: <https://www.thinktecture.com/en/kubernetes/serverless-workloads-with-keda/> |

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| Question | You are creating a CLI script that creates an Azure web app and related services in Azure App Service. The web app uses the following variables:    You need to automatically deploy code from GitHub to the newly created web app. How should you complete the script? |
| Answer |  |
| Explanation | Box 1: az appservice plan create The azure group creates command successfully returns JSON result. Now we can use resource group to create a azure app service plan  Box 2: az webapp create - Create a new web app..  Box 3: --plan $webappname - ..with the serviceplan we created in step 1.  Box 4: az webapp deployment - Continuous Delivery with GitHub. Example: az webapp deployment source config --name firstsamplewebsite1 --resource-group websites--repo-url $gitrepo --branch master --git-token $token Box 5: --repo-url $gitrepo --branch master --manual-integration Reference: https://medium.com/@satish1v/devops-your-way-to-azure-web-apps-with-azure-cli-206ed4b3e9b1 |

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| Question | You are developing an Azure Web App. You configure TLS mutual authentication for the web app. You need to validate the client certificate in the web app. To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | Accessing the client certificate from App Service. If you are using ASP.NET and configure your app to use client certificate authentication, the certificate will be available through the HttpRequest.ClientCertificate property. For other application stacks, the client cert will be available in your app through a base64 encoded value in the "X-ARR-ClientCert" request header. Your application can create a certificate from this value and then use it for authentication and authorization purposes in your application. Reference: <https://docs.microsoft.com/en-us/azure/app-service/app-service-web-configure-tls-mutual-auth> |

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| Question | You are developing a Docker/Go using Azure App Service Web App for Containers. You plan to run the container in an App Service on Linux. You identify a Docker container image to use. None of your current resource groups reside in a location that supports Linux. You must minimize the number of resource groups required. You need to create the application and perform an initial deployment. Which three Azure CLI commands should you use to develop the solution? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | You can host native Linux applications in the cloud by using Azure Web Apps. To create a Web App for Containers, you must run Azure CLI commands that create a group, then a service plan, and finally the web app itself.  Step 1: az group create - In the Cloud Shell, create a resource group with the az group create command. Step 2: az appservice plan create In the Cloud Shell, create an App Service plan in the resource group with the az appservice plan create command.  Step 3: az webapp create - In the Cloud Shell, create a web app in the myAppServicePlan App Service plan with the az webapp create command. Don't forget to replace with a unique app name, and <docker-ID> with your Docker ID. Reference: <https://docs.microsoft.com/mt-mt/azure/app-service/containers/quickstart-docker-go?view=sql-server-ver15> |

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| Question | Fourth Coffee has an ASP.NET Core web app that runs in Docker. The app is mapped to the www.fourthcoffee.com domain.  Fourth Coffee is migrating this application to Azure. You need to provision an App Service Web App to host this docker image and map the custom domain to the App Service web app. A resource group named FourthCoffeePublicWebResourceGroup has been created in the WestUS region that contains an App Service Plan named AppServiceLinuxDockerPlan. Which order should the CLI commands be used to develop the solution? To answer, move all of the Azure CLI commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: #bin/bash - The appName is used when the webapp-name is created in step 2. Step 2: az webapp config hostname add The webapp-name is used when the webapp is created in step 3.  Step 3: az webapp create - Create a web app. In the Cloud Shell, create a web app in the myAppServicePlan App Service plan with the az webapp create command. Step 4: az webapp confing container set In Create a web app, you specified an image on Docker Hub in the az webapp create command. This is good enough for a public image. To use a private image, you need to configure your Docker account ID and password in your Azure web app. In the Cloud Shell, follow the az webapp create command with az webapp config container set. Reference: <https://docs.microsoft.com/en-us/azure/app-service/containers/tutorial-custom-docker-image> |

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| Question | You are developing a serverless Java application on Azure. You create a new Azure Key Vault to work with secrets from a new Azure Functions application. The application must meet the following requirements: ✑ Reference the Azure Key Vault without requiring any changes to the Java code. ✑ Dynamically add and remove instances of the Azure Functions host based on the number of incoming application events. ✑ Ensure that instances are perpetually warm to avoid any cold starts. ✑ Connect to a VNet. ✑ Authentication to the Azure Key Vault instance must be removed if the Azure Function application is deleted. You need to grant the Azure Functions application access to the Azure Key Vault. Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Explanation: Step 1: Create the Azure Functions app with a Consumption plan type. Use the Consumption plan for serverless. Step 2: Create a system-assigned managed identity for the application. Create a system-assigned managed identity for your application. Key Vault references currently only support system-assigned managed identities. User-assigned identities cannot be used. Step 3: Create an access policy in Key Vault for the application identity. Create an access policy in Key Vault for the application identity you created earlier. Enable the "Get" secret permission on this policy. Do not configure the "authorized application" or applicationId settings, as this is not compatible with a managed identity. Reference: <https://docs.microsoft.com/en-us/azure/app-service/app-service-key-vault-references> |

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| Question | You develop a website. You plan to host the website in Azure. You expect the website to experience high traffic volumes after it is published. You must ensure that the website remains available and responsive while minimizing cost. You need to deploy the website. What should you do? |
| Answer | **A.**Deploy the website to a virtual machine. Configure the virtual machine to automatically scale when the CPU load is high.  **B.**Deploy the website to an App Service that uses the Shared service tier. Configure the App Service plan to automatically scale when the CPU load is high.  **C.**Deploy the website to a virtual machine. Configure a Scale Set to increase the virtual machine instance count when the CPU load is high.  **D.**Deploy the website to an App Service that uses the Standard service tier. Configure the App Service plan to automatically scale when the CPU load is high. |
| Explanation | Windows Azure Web Sites (WAWS) offers 3 modes: Standard, Free, and Shared. Standard mode carries an enterprise-grade SLA (Service Level Agreement) of 99.9% monthly, even for sites with just one instance. Standard mode runs on dedicated instances, making it different from the other ways to buy Windows Azure Web Sites. Incorrect Answers: B: Shared and Free modes do not offer the scaling flexibility of Standard, and they have some important limits. Shared mode, just as the name states, also uses shared Compute resources, and also has a CPU limit. So, while neither Free nor Shared is likely to be the best choice for your production environment due to these limits. |

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| Question | A company is developing a Java web app. The web app code is hosted in a GitHub repository located at https://github.com/Contoso/webapp. The web app must be evaluated before it is moved to production. You must deploy the initial code release to a deployment slot named staging. You need to create the web app and deploy the code. How should you complete the commands? |
| Answer |  |
| Explanation | Box 1: group - # Create a resource group. az group create --location westeurope --name myResourceGroup  Box 2: appservice plan - # Create an App Service plan in STANDARD tier (minimum required by deployment slots). az appservice plan create --name $webappname --resource-group myResourceGroup --sku S1  Box 3: webapp - # Create a web app. az webapp create --name $webappname --resource-group myResourceGroup \ --plan $webappname  Box 4: webapp deployment slot - #Create a deployment slot with the name "staging". az webapp deployment slot create --name $webappname --resource-group myResourceGroup \ --slot staging  Box 5: webapp deployment source - # Deploy sample code to "staging" slot from GitHub. az webapp deployment source config --name $webappname --resource-group myResourceGroup \ --slot staging --repo-url $gitrepo --branch master --manual-integration Reference: <https://docs.microsoft.com/en-us/azure/app-service/scripts/cli-deploy-staging-environment> |

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| Question | You have a web service that is used to pay for food deliveries. The web service uses Azure Cosmos DB as the data store. You plan to add a new feature that allows users to set a tip amount. The new feature requires that a property named tip on the document in Cosmos DB must be present and contain a numeric value. There are many existing websites and mobile apps that use the web service that will not be updated to set the tip property for some time. How should you complete the trigger? |
| Answer |  |
| Explanation |  |

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| Question | You are developing an application that uses Azure Blob storage. The application must read the transaction logs of all the changes that occur to the blobs and the blob metadata in the storage account for auditing purposes. The changes must be in the order in which they occurred, include only create, update, delete, and copy operations and be retained for compliance reasons. You need to process the transaction logs asynchronously. What should you do? |
| Answer | 1. A. Process all Azure Blob storage events by using Azure Event Grid with a subscriber Azure Function app. 2. Enable the change feed on the storage account and process all changes for available events. 3. Process all Azure Storage Analytics logs for successful blob events. 4. Use the Azure Monitor HTTP Data Collector API and scan the request body for successful blob events. |
| Explanation | Change feed support in Azure Blob Storage The purpose of the change feed is to provide transaction logs of all the changes that occur to the blobs and the blob metadata in your storage account. The change feed provides ordered, guaranteed, durable, immutable, read-only log of these changes. Client applications can read these logs at any time, either in streaming or in batch mode. The change feed enables you to build efficient and scalable solutions that process change events that occur in your Blob Storage account at a low cost. Reference: <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-change-feed> |

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| Question | You plan to create a Docker image that runs an ASP.NET Core application named ContosoApp. You have a setup script named setupScript.ps1 and a series of application files including ContosoApp.dll. You need to create a Dockerfile document that meets the following requirements: ✑ Call setupScripts.ps1 when the container is built. ✑ Run ContosoApp.dll when the container starts. The Dockerfile document must be created in the same folder where ContosoApp.dll and setupScript.ps1 are stored. Which five commands should you use to develop the solution? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Box 1: CMD [..] Cmd starts a new instance of the command interpreter, Cmd.exe. Syntax: CMD <string> Specifies the command you want to carry out. Box 2: FROM microsoft/aspnetcore-build:latest  Box 3: WORKDIR /apps/ContosoApp - Bxo 4: COPY ./ . Box 5: RUN powershell ./setupScript.ps1 |

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| Question | You are developing an Azure Function App that processes images that are uploaded to an Azure Blob container. Images must be processed as quickly as possible after they are uploaded, and the solution must minimize latency. You create code to process images when the Function App is triggered. You need to configure the Function App. What should you do? |
| Answer | **A.**Use an App Service plan. Configure the Function App to use an Azure Blob Storage input trigger.  **B.**Use a Consumption plan. Configure the Function App to use an Azure Blob Storage trigger.  **C.**Use a Consumption plan. Configure the Function App to use a Timer trigger.  **D.**Use an App Service plan. Configure the Function App to use an Azure Blob Storage trigger.  **E.**Use a Consumption plan. Configure the Function App to use an Azure Blob Storage input trigger. |
| Explanation | The Blob storage trigger starts a function when a new or updated blob is detected. The blob contents are provided as input to the function. The Consumption plan limits a function app on one virtual machine (VM) to 1.5 GB of memory. Reference: <https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-storage-blob-trigger> |

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| Question | You are configuring a new development environment for a Java application. The environment requires a Virtual Machine Scale Set (VMSS), several storage accounts, and networking components. The VMSS must not be created until the storage accounts have been successfully created and an associated load balancer and virtual network is configured. How should you complete the Azure Resource Manager template? |
| Answer |  |
| Explanation | Box 1: copyIndex - Notice that the name of each resource includes the copyIndex() function, which returns the current iteration in the loop. copyIndex() is zero-based.  Box 2: copy - By adding the copy element to the resources section of your template, you can dynamically set the number of resources to deploy.  Box 3: dependsOn - Example: "type": "Microsoft.Compute/virtualMachineScaleSets", "apiVersion": "2020-06-01", "name": "[variables('namingInfix')]", "location": "[parameters('location')]", "sku": { "name": "[parameters('vmSku')]", "tier": "Standard", "capacity": "[parameters('instanceCount')]" }, "dependsOn": [ "[resourceId('Microsoft.Network/loadBalancers', variables('loadBalancerName'))]", "[resourceId('Microsoft.Network/virtualNetworks', variables('virtualNetworkName'))]" ], Reference: https://docs.microsoft.com/en-us/azure/azure-resource-manager/templates/copy-resources [https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/quick-create-template-*windows*](https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/quick-create-template-windows) |

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| Question | You are developing an application that uses Azure Blob storage. The application must read the transaction logs of all the changes that occur to the blobs and the blob metadata in the storage account for auditing purposes. The changes must be in the order in which they occurred, include only create, update, delete, and copy operations and be retained for compliance reasons. You need to process the transaction logs asynchronously. What should you do? |
| Answer | A. Process all Azure Blob storage events by using Azure Event Grid with a subscriber Azure Function app.  B. Enable the change feed on the storage account and process all changes for available events.  C. Process all Azure Storage Analytics logs for successful blob events.  D. Use the Azure Monitor HTTP Data Collector API and scan the request body for successful blob events. |
| Explanation | Change feed support in Azure Blob Storage The purpose of the change feed is to provide transaction logs of all the changes that occur to the blobs and the blob metadata in your storage account. The change feed provides ordered, guaranteed, durable, immutable, read-only log of these changes. Client applications can read these logs at any time, either in streaming or in batch mode. The change feed enables you to build efficient and scalable solutions that process change events that occur in your Blob Storage account at a low cost. Reference: https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-change-feed |

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| Question | You are developing an application. You have an Azure user account that has access to two subscriptions. You need to retrieve a storage account key secret from Azure Key Vault. In which order should you arrange the PowerShell commands to develop the solution? To answer, move all commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: Get-AzSubscription - If you have multiple subscriptions, you might have to specify the one that was used to create your key vault. Enter the following to see the subscriptions for your account:  Get-AzSubscription - Step 2: Set-AzContext -SubscriptionId To specify the subscription that's associated with the key vault you'll be logging, enter: Set-AzContext -SubscriptionId <subscriptionID>  Step 3: Get-AzStorageAccountKey - You must get that storage account key. Step 4: $secretvalue = ConvertTo-SecureString <storageAccountKey> -AsPlainText -Force Set-AzKeyVaultSecret -VaultName <vaultName> -Name <secretName> -SecretValue $secretvalue After retrieving your secret (in this case, your storage account key), you must convert that key to a secure string, and then create a secret with that value in your key vault.  Step 5: Get-AzKeyVaultSecret - Next, get the URI for the secret you created. You'll need this URI in a later step to call the key vault and retrieve your secret. Run the following PowerShell command and make note of the ID value, which is the secret's URI: Get-AzKeyVaultSecret ""VaultName <vaultName> Reference: <https://docs.microsoft.com/bs-latn-ba/Azure/key-vault/key-vault-key-rotation-log-monitoring> |

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| Question | You are building a website to access project data related to teams within your organization. The website does not allow anonymous access. Authentication is performed using an Azure Active Directory (Azure AD) app named internal. The website has the following authentication requirements: ✑ Azure AD users must be able to login to the website. ✑ Personalization of the website must be based on membership in Active Directory groups. You need to configure the application"™s manifest to meet the authentication requirements. How should you configure the manifest? |
| Answer |  |
| Explanation | Box 1: groupMembershipClaims - Scenario: Personalization of the website must be based on membership in Active Directory groups. Group claims can also be configured in the Optional Claims section of the Application Manifest. Enable group membership claims by changing the groupMembershipClaim The valid values are: "All" "SecurityGroup" "DistributionList" "DirectoryRole"  Box 2: oauth2AllowImplicitFlow - Here from the list of options given , if we want the application to fetch the required tokens , we would need to allow Implicit Flow. <https://docs.microsoft.com/en-us/azure/active-directory/develop/reference-app-manifest>  Reference: <https://docs.microsoft.com/en-us/azure/active-directory/hybrid/how-to-connect-fed-group-claims> |

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| Question | You develop an app that allows users to upload photos and videos to Azure storage. The app uses a storage REST API call to upload the media to a blob storage account named Account1. You have blob storage containers named Container1 and Container2. Uploading of videos occurs on an irregular basis. You need to copy specific blobs from Container1 to Container2 when a new video is uploaded. What should you do? |
| Answer | **A.** Copy blobs to Container2 by using the Put Blob operation of the Blob Service REST API  **B.** Create an Event Grid topic that uses the Start-AzureStorageBlobCopy cmdlet  **C.** Use AzCopy with the Snapshot switch to copy blobs to Container2  **D.** Download the blob to a virtual machine and then upload the blob to Container2 |
| Explanation | The Start-AzureStorageBlobCopy cmdlet starts to copy a blob.  Example 1: Copy a named blob - C:\PS>Start-AzureStorageBlobCopy -SrcBlob "ContosoPlanning2015" -DestContainer "ContosoArchives" -SrcContainer "ContosoUploads" This command starts the copy operation of the blob named ContosoPlanning2015 from the container named ContosoUploads to the container named ContosoArchives. Reference: https://docs.microsoft.com/en-us/powershell/module/azure.storage/start-azurestorageblobcopy?view=azurermps-6.13.0 |

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| Question | You are developing an ASP.NET Core website that uses Azure FrontDoor. The website is used to build custom weather data sets for researchers. Data sets are downloaded by users as Comma Separated Value (CSV) files. The data is refreshed every 10 hours. Specific files must be purged from the FrontDoor cache based upon Response Header values. You need to purge individual assets from the Front Door cache. Which type of cache purge should you use? |
| Answer | **A.** single path  **B.** wildcard  **C.** root domain |
| Explanation | These formats are supported in the lists of paths to purge: ✑ Single path purge: Purge individual assets by specifying the full path of the asset (without the protocol and domain), with the file extension, for example, / [1] ✑ Wildcard purge: Asterisk (\*) may be used as a wildcard. Purge all folders, subfolders, and files under an endpoint with /\* in the path or purge all subfolders and files under a specific folder by specifying the folder followed by /\*, for example, /pictures/\*. ✑ Root domain purge: Purge the root of the endpoint with "/" in the path. Reference: <https://docs.microsoft.com/en-us/azure/frontdoor/front-door-caching> |

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| Question | Your company is developing an Azure API. You need to implement authentication for the Azure API. You have the following requirements: All API calls must be secure. ✑ Callers to the API must not send credentials to the API. Which authentication mechanism should you use? |
| Answer | **A.** Basic  **B.** Anonymous  **C.** Managed identity  **D.** Client certificate |
| Explanation | Use the authentication-managed-identity policy to authenticate with a backend service using the managed identity of the API Management service. This policy essentially uses the managed identity to obtain an access token from Azure Active Directory for accessing the specified resource. After successfully obtaining the token, the policy will set the value of the token in the Authorization header using the Bearer scheme. Reference: <https://docs.microsoft.com/bs-cyrl-ba/azure/api-management/api-management-authentication-policies> |

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| Question | You are a developer for a SaaS company that offers many web services. All web services for the company must meet the following requirements: ✑ Use API Management to access the services ✑Connect for authentication ✑ Prevent anonymous usage A recent security audit found that several web services can be called without any authentication. Which API Management policy should you implement? |
| Answer | **A.** jsonp  **B.** authentication-certificate  **C.** check-header  **D.** validate-jwt |
| Explanation | Add the validate-jwt policy to validate the OAuth token for every incoming request. Incorrect Answers: A: The jsonp policy adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients. JSONP is a method used in JavaScript programs to request data from a server in a different domain. JSONP bypasses the limitation enforced by most web browsers where access to web pages must be in the same domain. JSONP - Adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients. Reference: <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-protect-backend-with-aad> |

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| Question | Contoso, Ltd. provides an API to customers by using Azure API Management (APIM). The API authorizes users with a JWT token. You must implement response caching for the APIM gateway. The caching mechanism must detect the user ID of the client that accesses data for a given location and cache the response for that user ID. You need to add the following policies to the policies file: ✑ a set-variable policy to store the detected user identity ✑ a cache-lookup-value policy ✑ a cache-store-value policy ✑ a find-and-replace policy to update the response body with the user profile information To which policy section should you add the policies? |
| Answer |  |
| Explanation | Box 1: Inbound. A set-variable policy to store the detected user identity. Example: <policies> <inbound> <!-- How you determine user identity is application dependent --> <set-variable name="enduserid" value="@(context.Request.Headers.GetValueOrDefault("Authorization","").Split(' ')[1].AsJwt()?.Subject)" />  Box 2: Inbound -  A cache-lookup-value policy - Example: <inbound> <base /> <cache-lookup vary-by-developer="true | false" vary-by-developer-groups="true | false" downstream-caching-type="none | private | public" must- revalidate="true | false"> <vary-by-query-parameter>parameter name</vary-by-query-parameter> <!-- optional, can repeated several times --> </cache-lookup> </inbound>  Box 3: Inbound - A cache-store-value policy.(Note cache-store is outbound , cache-store-value is inbound) Example: <Inbound> <base /> <cache-store duration="3600" /> </Inbound>  Box 4: Outbound - A find-and-replace policy to update the response body with the user profile information. Example: <outbound> <!-- Update response body with user profile--> <find-and-replace from='"$userprofile$"' to="@((string)context.Variables["userprofile"])" /> <base /> </outbound> Reference: https://docs.microsoft.com/en-us/azure/api-management/api-management-caching-policies https://docs.microsoft.com/en-us/azure/api-management/api-management-sample-cache-by-key |

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| Question | You develop a web application. You need to register the application with an active Azure Active Directory (Azure AD) tenant. Which three actions should you perform in sequence? To answer, move all actions from the list of actions to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Register a new application using the Azure portal 1. Sign in to the Azure portal using either a work or school account or a personal Microsoft account. 2. If your account gives you access to more than one tenant, select your account in the upper right corner. Set your portal session to the Azure AD tenant that you want. 3. Search for and select Azure Active Directory. Under Manage, select App registrations. 4. Select New registration. (Step 1) 5. In Register an application, enter a meaningful application name to display to users. 6. Specify who can use the application. Select the Azure AD instance. (Step 2) 7. Under Redirect URI (optional), select the type of app you're building: Web or Public client (mobile & desktop). Then enter the redirect URI, or reply URL, for your application. (Step 3) 8. When finished, select Register. |

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| Question | You develop Azure solutions. You must connect to a No-SQL globally-distributed database by using the .NET API. You need to create an object to configure and execute requests in the database. Which code segment should you use? |
| Answer | * A. new Container(EndpointUri, PrimaryKey); * B. new Database(EndpointUri, PrimaryKey); * C. new CosmosClient(EndpointUri, PrimaryKey); |
| Explanation | Example: // Create a new instance of the Cosmos Client this.cosmosClient = new CosmosClient(EndpointUri, PrimaryKey) //ADD THIS PART TO YOUR CODE await this.CreateDatabaseAsync(); Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/sql-api-get-started> |

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| Question | You are developing a new page for a website that uses Azure Cosmos DB for data storage. The feature uses documents that have the following format:  You must display data for the new page in a specific order. You create the following query for the page:  You need to configure a Cosmos DB policy to the support the query. How should you configure the policy? To answer, drag the appropriate JSON segments to the correct locations. Each JSON segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: compositeIndexes - You can order by multiple properties. A query that orders by multiple properties requires a composite index.  Box 2: descending - Example: Composite index defined for (name ASC, age ASC): It is optional to specify the order. If not specified, the order is ascending. { "automatic":true, "indexingMode":"Consistent", "includedPaths":[ { "path":"/\*" } ], "excludedPaths":[], "compositeIndexes":[ [ { "path":"/name", }, { "path":"/age", } ] ] } |

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| Question | You are building a traffic monitoring system that monitors traffic along six highways. The system produces time series analysis-based reports for each highway. Data from traffic sensors are stored in Azure Event Hub. Traffic data is consumed by four departments. Each department has an Azure Web App that displays the time series-based reports and contains a WebJob that processes the incoming data from Event Hub. All Web Apps run on App Service Plans with three instances. Data throughput must be maximized. Latency must be minimized. You need to implement the Azure Event Hub. Which settings should you use? |
| Answer |  |
| Explanation | Box 1: 6 - The number of partitions is specified at creation and must be between 2 and 32. There are 6 highways.  Box 2: Highway - Reference: https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-features |

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| Question | You are developing a microservices solution. You plan to deploy the solution to a multinode Azure Kubernetes Service (AKS) cluster. You need to deploy a solution that includes the following features: ✑ reverse proxy capabilities ✑ configurable traffic routing ✑ TLS termination with a custom certificate Which components should you use? To answer, drag the appropriate components to the correct requirements. Each component may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Helm - To create the ingress controller, use Helm to install nginx-ingress.  Box 2: kubectl - To find the cluster IP address of a Kubernetes pod, use the kubectl get pod command on your local machine, with the option -o wide .  Box 3: Ingress Controller - An ingress controller is a piece of software that provides reverse proxy, configurable traffic routing, and TLS termination for Kubernetes services. Kubernetes ingress resources are used to configure the ingress rules and routes for individual Kubernetes services. Incorrect Answers: Virtual Kubelet: Virtual Kubelet is an open-source Kubernetes kubelet implementation that masquerades as a kubelet. This allows Kubernetes nodes to be backed by Virtual Kubelet providers such as serverless cloud container platforms. CoreDNS: CoreDNS is a flexible, extensible DNS server that can serve as the Kubernetes cluster DNS. Like Kubernetes, the CoreDNS project is hosted by the CNCF. Reference: https://docs.microsoft.com/bs-cyrl-ba/azure/aks/ingress-basic <https://www.digitalocean.com/community/tutorials/how-to-inspect-kubernetes-networking> |

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| Question | You are implementing an order processing system. A point of sale application publishes orders to topics in an Azure Service Bus queue. The Label property for the topic includes the following data:  The system has the following requirements for subscriptions:  You need to implement filtering and maximize throughput while evaluating filters. Which filter types should you implement? To answer, drag the appropriate filter types to the correct subscriptions. Each filter type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | FutureOrders: No Filter - HighPriortyOrders: CorrelationFilter  CorrelationID only -  InternationalOrders: SQLFilter - Country NOT USA requires an SQL Filter  HighQuantityOrders: SQLFilter - Need to use relational operators so an SQL Filter is needed.  AllOrders: SQL Filter - SQL Filter: SQL Filters - A SqlFilter holds a SQL-like conditional expression that is evaluated in the broker against the arriving messages' user-defined properties and system properties. All system properties must be prefixed with sys. in the conditional expression. The SQL-language subset for filter conditions tests for the existence of properties (EXISTS), as well as for null-values (IS NULL), logical NOT/AND/OR, relational operators, simple numeric arithmetic, and simple text pattern matching with LIKE. Correlation Filters - A CorrelationFilter holds a set of conditions that are matched against one or more of an arriving message's user and system properties. A common use is to match against the CorrelationId property, but the application can also choose to match against ContentType, Label, MessageId, ReplyTo, ReplyToSessionId, SessionId, To, and any user-defined properties. A match exists when an arriving message's value for a property is equal to the value specified in the correlation filter. For string expressions, the comparison is case-sensitive. When specifying multiple match properties, the filter combines them as a logical AND condition, meaning for the filter to match, all conditions must match. Boolean filters - The TrueFilter and FalseFilter either cause all arriving messages (true) or none of the arriving messages (false) to be selected for the subscription. Reference: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/topic-filters> |

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| Question | Your company has several websites that use a company logo image. You use Azure Content Delivery Network (CDN) to store the static image. You need to determine the correct process of how the CDN and the Point of Presence (POP) server will distribute the image and list the items in the correct order. In which order do the actions occur? |
| Answer |  |
| Explanation | Step 1: A user requests the image.. A user requests a file (also called an asset) by using a URL with a special domain name, such as <endpoint name>.azureedge.net. This name can be an endpoint hostname or a custom domain. The DNS routes the request to the best performing POP location, which is usually the POP that is geographically closest to the user. Step 2: If no edge servers in the POP have the.. If no edge servers in the POP have the file in their cache, the POP requests the file from the origin server. The origin server can be an Azure Web App, Azure Cloud Service, Azure Storage account, or any publicly accessible web server. Step 3: The origin server returns the.. The origin server returns the file to an edge server in the POP. An edge server in the POP caches the file and returns the file to the original requestor (Alice). The file remains cached on the edge server in the POP until the time-to-live (TTL) specified by its HTTP headers expires. If the origin server didn't specify a TTL, the default TTL is seven days. Step 4: Subsequent requests for.. Additional users can then request the same file by using the same URL that the original user used, and can also be directed to the same POP. If the TTL for the file hasn't expired, the POP edge server returns the file directly from the cache. This process results in a faster, more responsive user experience. Reference: <https://docs.microsoft.com/en-us/azure/cdn/cdn-overview> |

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| Question | You are developing an Azure Cosmos DB solution by using the Azure Cosmos DB SQL API. The data includes millions of documents. Each document may contain hundreds of properties. The properties of the documents do not contain distinct values for partitioning. Azure Cosmos DB must scale individual containers in the database to meet the performance needs of the application by spreading the workload evenly across all partitions over time. You need to select a partition key. Which two partition keys can you use? |
| Answer | * A. a single property value that does not appear frequently in the documents * B. a value containing the collection name * C. a single property value that appears frequently in the documents * D. a concatenation of multiple property values with a random suffix appended * E. a hash suffix appended to a property value |
| Explanation | You can form a partition key by concatenating multiple property values into a single artificial partitionKey property. These keys are referred to as synthetic keys. Another possible strategy to distribute the workload more evenly is to append a random number at the end of the partition key value. When you distribute items in this way, you can perform parallel write operations across partitions. Note: It's the best practice to have a partition key with many distinct values, such as hundreds or thousands. The goal is to distribute your data and workload evenly across the items associated with these partition key values. If such a property doesn't exist in your data, you can construct a synthetic partition key. Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/synthetic-partition-keys> |

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| Question | A company develops a series of mobile games. All games use a single leaderboard service. You have the following requirements: ✑ Code must be scalable and allow for growth. ✑ Each record must consist of a playerId, gameId, score, and time played. ✑ When users reach a new high score, the system will save the new score using the SaveScore function below. ✑ Each game is assigned an Id based on the series title. You plan to store customer information in Azure Cosmos DB. The following data already exists in the database:  You develop the following code to save scores in the data store. (Line numbers are included for reference only.)  You develop the following code to query the database. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point.  Question:  A company develops a series of mobile games. All games use a single leaderboard service. You have the following requirements: ✑ Code must be scalable and allow for growth. ✑ Each record must consist of a playerId, gameId, score, and time played. ✑ When users reach a new high score, the system will save the new score using the SaveScore function below. ✑ Each game is assigned an Id based on the series title. You plan to store customer information in Azure Cosmos DB. The following data already exists in the database:  You develop the following code to save scores in the data store. (Line numbers are included for reference only.)  You develop the following code to query the database. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Box 1: Yes - Create a table. A CloudTableClient object lets you get reference objects for tables and entities. The following code creates a CloudTableClient object and uses it to create a new CloudTable object, which represents a table // Retrieve storage account from connection-string. CloudStorageAccount storageAccount = CloudStorageAccount.parse(storageConnectionString); // Create the table client. CloudTableClient tableClient = storageAccount.createCloudTableClient(); // Create the table if it doesn't exist. String tableName = "people"; CloudTable cloudTable = tableClient.getTableReference(tableName); cloudTable.createIfNotExists();  Box 2: No - New records are inserted with TableOperation.insert. Old records are not updated. To update old records TableOperation.insertOrReplace should be used instead.  Box 3: No -  Box 4: Yes - Reference: <https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-java> |

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| Question | You are developing a solution that uses the Azure Storage Client library for .NET. You have the following code: (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: Yes - AcquireLeaseAsync does not specify leaseTime. leaseTime is a TimeSpan representing the span of time for which to acquire the lease, which will be rounded down to seconds. If null, an infinite lease will be acquired. If not null, this must be 15 to 60 seconds.  Box 2: No - The GetBlockBlobReference method just gets a reference to a block blob in this container.  Box 3: Yes - The BreakLeaseAsync method initiates an asynchronous operation that breaks the current lease on this container. Reference: https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.storage.blob.cloudblobcontainer.acquireleaseasync https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.storage.blob.cloudblobcontainer.getblockblobreference <https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.storage.blob.cloudblobcontainer.breakleaseasync> |

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| Question | You are building a website that uses Azure Blob storage for data storage. You configure Azure Blob storage lifecycle to move all blobs to the archive tier after 30 days. Customers have requested a service-level agreement (SLA) for viewing data older than 30 days. You need to document the minimum SLA for data recovery. Which SLA should you use? |
| Answer | * A. at least two days * B. between one and 15 hours * C. at least one day * D. between zero and 60 minutes |
| Explanation | The archive access tier has the lowest storage cost. But it has higher data retrieval costs compared to the hot and cool tiers. Data in the archive tier can take several hours to retrieve depending on the priority of the rehydration. For small objects, a high priority rehydrate may retrieve the object from archive in under 1 hour. Reference: <https://docs.microsoft.com/en-us/azure/storage/blobs/storage-blob-storage-tiers?tabs=azure-portal> |

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| Question | You are developing a ticket reservation system for an airline. The storage solution for the application must meet the following requirements: ✑ Ensure at least 99.99% availability and provide low latency. ✑ Accept reservations event when localized network outages or other unforeseen failures occur. ✑ Process reservations in the exact sequence as reservations are submitted to minimize overbooking or selling the same seat to multiple travelers. ✑ Allow simultaneous and out-of-order reservations with a maximum five-second tolerance window. You provision a resource group named airlineResourceGroup in the Azure South-Central US region. You need to provision a SQL API Cosmos DB account to support the app. How should you complete the Azure CLI commands? |
| Answer |  |
| Explanation | Box 1: BoundedStaleness - Bounded staleness: The reads are guaranteed to honor the consistent-prefix guarantee. The reads might lag behind writes by at most "K" versions (that is, "updates") of an item or by "T" time interval. In other words, when you choose bounded staleness, the "staleness" can be configured in two ways: The number of versions (K) of the item The time interval (T) by which the reads might lag behind the writes Incorrect Answers:  Strong - Strong consistency offers a linearizability guarantee. Linearizability refers to serving requests concurrently. The reads are guaranteed to return the most recent committed version of an item. A client never sees an uncommitted or partial write. Users are always guaranteed to read the latest committed write. Box 2: --enable-automatic-failover true\ For multi-region Cosmos accounts that are configured with a single-write region, enable automatic-failover by using Azure CLI or Azure portal. After you enable automatic failover, whenever there is a regional disaster, Cosmos DB will automatically failover your account. Question: Accept reservations event when localized network outages or other unforeseen failures occur. Box 3: --locations'southcentralus=0 eastus=1 westus=2 Need multi-region. Reference: https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels <https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/cosmos-db/manage-with-cli.md> |

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| Question | You have a new Azure subscription. You are developing an internal website for employees to view sensitive data. The website uses Azure Active Directory (Azure AD) for authentication. You need to implement multifactor authentication for the website. Which two actions should you perform? Each correct answer presents part of the solution. NOTE: Each correct selection is worth one point |
| Answer | * A. Configure the website to use Azure AD B2C. * B. In Azure AD, create a new conditional access policy. * C. Upgrade to Azure AD Premium. * D. In Azure AD, enable application proxy. * E. In Azure AD conditional access, enable the baseline policy. |
| Explanation | B: MFA Enabled by conditional access policy. It is the most flexible means to enable two-step verification for your users. Enabling using conditional access policy only works for Azure MFA in the cloud and is a premium feature of Azure AD. C: Multi-Factor Authentication comes as part of the following offerings: ✑ Azure Active Directory Premium licenses - Full featured use of Azure Multi-Factor Authentication Service (Cloud) or Azure Multi-Factor Authentication Server (On-premises). ✑ Multi-Factor Authentication for Office 365 ✑ Azure Active Directory Global Administrators Reference: <https://docs.microsoft.com/en-us/azure/active-directory/authentication/howto-mfa-getstarted> |

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| Question | You are using Azure Front Door Service. You are expecting inbound files to be compressed by using Brotli compression. You discover that inbound XML files are not compressed. The files are 9 megabytes (MB) in size. You need to determine the root cause for the issue. To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | Box 1: No - Front Door can dynamically compress content on the edge, resulting in a smaller and faster response to your clients. All files are eligible for compression. However, a file must be of a MIME type that is eligible for compression list.  Box 2: No - Sometimes you may wish to purge cached content from all edge nodes and force them all to retrieve new updated assets. This might be due to updates to your web application, or to quickly update assets that contain incorrect information.  Box 3: Yes - These profiles support the following compression encodings: Gzip (GNU zip), Brotli Reference: <https://docs.microsoft.com/en-us/azure/frontdoor/front-door-caching> |

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| Question | You are developing an Azure App Service hosted ASP.NET Core web app to deliver video-on-demand streaming media. You enable an Azure Content Delivery Network (CDN) Standard for the web endpoint. Customer videos are downloaded from the web app by using the following example URL: http://www.contoso.com/ content.mp4?quality=1 All media content must expire from the cache after one hour. Customer videos with varying quality must be delivered to the closest regional point of presence (POP) node. You need to configure Azure CDN caching rules. Which options should you use? To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | Box 1: Override - Override: Ignore origin-provided cache duration; use the provided cache duration instead. This will not override cache-control: no-cache. Set if missing: Honor origin-provided cache-directive headers, if they exist; otherwise, use the provided cache duration. Incorrect: Bypass cache: Do not cache and ignore origin-provided cache-directive headers.  Box 2: 1 hour - All media content must expire from the cache after one hour.  Box 3: Cache every unique URL - Cache every unique URL: In this mode, each request with a unique URL, including the query string, is treated as a unique asset with its own cache. For example, the response from the origin server for a request for example.ashx?q=test1 is cached at the POP node and returned for subsequent caches with the same query string. A request for example.ashx?q=test2 is cached as a separate asset with its own time-to-live setting. Incorrect Answers: Bypass caching for query strings: In this mode, requests with query strings are not cached at the CDN POP node. The POP node retrieves the asset directly from the origin server and passes it to the requestor with each request. Ignore query strings: Default mode. In this mode, the CDN point-of-presence (POP) node passes the query strings from the requestor to the origin server on the first request and caches the asset. All subsequent requests for the asset that are served from the POP ignore the query strings until the cached asset expires. Reference: <https://docs.microsoft.com/en-us/azure/cdn/cdn-query-string> |

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| Question | You develop a web app that uses tier D1 app service plan by using the Web Apps feature of Microsoft Azure App Service. Spikes in traffic have caused increases in page load times. You need to ensure that the web app automatically scales when CPU load is about 85 percent and minimize costs. Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. NOTE: More than one order of answer choices is correct. |
| Answer |  |
| Explanation | Step 1: Configure the web app to the Standard App Service Tier The Standard tier supports auto-scaling, and we should minimize the cost. Step 2: Enable autoscaling on the web app  First enable autoscale -  Step 3: Add a scale rule -  Step 4: Add a Scale condition - Reference: <https://docs.microsoft.com/en-us/azure/monitoring-and-diagnostics/monitoring-autoscale-get-started> |

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| Question | You are debugging an application that is running on Azure Kubernetes cluster named cluster1. The cluster uses Azure Monitor for containers to monitor the cluster. The application has sticky sessions enabled on the ingress controller. Some customers report a large number of errors in the application over the last 24 hours. You need to determine on which virtual machines (VMs) the errors are occurring. How should you complete the Azure Monitor query? |
| Answer |  |
| Explanation | Box 1: ago(1d)  Box 2: distinct containerID - Box 3: where ContainerID in (ContainerIDs) Box 4: summarize Count by Computer Summarize: aggregate groups of rows Use summarize to identify groups of records, according to one or more columns, and apply aggregations to them. The most common use of summarize is count, which returns the number of results in each group. Reference: https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/get-started-queries <https://docs.microsoft.com/en-us/azure/azure-monitor/log-query/query-optimization> |

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| Question | You plan to deploy a web app to App Service on Linux. You create an App Service plan. You create and push a custom Docker image that contains the web app to Azure Container Registry. You need to access the console logs generated from inside the container in real-time. How should you complete the Azure CLI command? |
| Answer |  |
| Explanation | Box 1: config - To Configure logging for a web app use the command: az webapp log config Box 2: --docker-container-logging Syntax include: az webapp log config [--docker-container-logging {filesystem, off}]  Box 3: webapp - To download a web app's log history as a zip file use the command: az webapp log download  Box 4: download - Reference: <https://docs.microsoft.com/en-us/cli/azure/webapp/log> |

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| Question | You develop and deploy an ASP.NET web app to Azure App Service. You use Application Insights telemetry to monitor the app. You must test the app to ensure that the app is available and responsive from various points around the world and at regular intervals. If the app is not responding, you must send an alert to support staff. You need to configure a test for the web app. Which two test types can you use? |
| Answer | * A. integration * B. multi-step web * C. URL ping * D. unit * E. load |
| Explanation | There are three types of availability tests: ✑ URL ping test: a simple test that you can create in the Azure portal. ✑ Multi-step web test: A recording of a sequence of web requests, which can be played back to test more complex scenarios. Multi-step web tests are created in Visual Studio Enterprise and uploaded to the portal for execution. ✑ Custom Track Availability Tests: If you decide to create a custom application to run availability tests, the TrackAvailability() method can be used to send the results to Application Insights. Reference: <https://docs.microsoft.com/en-us/azure/azure-monitor/app/monitor-web-app-availability> |

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| Question | A web service provides customer summary information for e-commerce partners. The web service is implemented as an Azure Function app with an HTTP trigger. Access to the API is provided by an Azure API Management instance. The API Management instance is configured in consumption plan mode. All API calls are authenticated by using OAuth. API calls must be cached. Customers must not be able to view cached data for other customers. You need to configure API Management policies for caching. How should you complete the policy statement? |
| Answer |  |
| Explanation | Box 1: internal - caching-type Choose between the following values of the attribute: ✑ internal to use the built-in API Management cache, ✑ external to use the external cache as Azure Cache for Redis prefer-external to use external cache if configured or internal cache otherwise.   Box 2: private - downstream-caching-type This attribute must be set to one of the following values. ✑ none - downstream caching is not allowed. ✑ private - downstream private caching is allowed. ✑ public - private and shared downstream caching is allowed.  Box 3: Authorization - <vary-by-header>Authorization</vary-by-header> <!-- should be present when allow-private-response-caching is "true"--> Note: Start caching responses per value of specified header, such as Accept, Accept-Charset, Accept-Encoding, Accept-Language, Authorization, Expect, From,  Host, If-Match - Reference: <https://docs.microsoft.com/en-us/azure/api-management/api-management-caching-policies> |

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| Question | You manage several existing Logic Apps. You need to change definitions, add new logic, and optimize these apps on a regular basis. What should you use? To answer, drag the appropriate tools to the correct functionalities. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Enterprise Integration Pack For business-to-business (B2B) solutions and seamless communication between organizations, you can build automated scalable enterprise integration workflows by using the Enterprise Integration Pack (EIP) with Azure Logic Apps.  Box 2: Code View Editor -  Edit JSON - Azure portal - 1. Sign in to the Azure portal. 2. From the left menu, choose All services. In the search box, find "logic apps", and then from the results, select your logic app. 3. On your logic app's menu, under Development Tools, select Logic App Code View. 4. The Code View editor opens and shows your logic app definition in JSON format.  Box 3: Logic Apps Designer - Reference: https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-enterprise-integration-overview <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-author-definitions> |

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| Question | A company is developing a solution that allows smart refrigerators to send temperature information to a central location. You have an existing Service Bus. The solution must receive and store messages until they can be processed. You create an Azure Service Bus instance by providing a name, pricing tier, subscription, resource group, and location. You need to complete the configuration. Which Azure CLI or PowerShell command should you run? |
| Answer | A.  B.  C.  D. |
| Explanation | A service bus instance has already been created (Step 2 below). Next is step 3, Create a Service Bus queue. Note: Steps: Step 1: # Create a resource group resourceGroupName="myResourceGroup" az group create --name $resourceGroupName --location eastus Step 2: # Create a Service Bus messaging namespace with a unique name namespaceName=myNameSpace$RANDOM az servicebus namespace create --resource-group $resourceGroupName --name $namespaceName --location eastus Step 3: # Create a Service Bus queue az servicebus queue create --resource-group $resourceGroupName --namespace-name $namespaceName --name BasicQueue Step 4: # Get the connection string for the namespace connectionString=$(az servicebus namespace authorization-rule keys list --resource-group $resourceGroupName --namespace-name $namespaceName --name RootManageSharedAccessKey --query primaryConnectionString --output tsv) Reference: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-quickstart-cli> |

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| Question | You are developing an application that uses Azure Storage Queues. You have the following code:  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: No - The QueueDescription.LockDuration property gets or sets the duration of a peek lock; that is, the amount of time that the message is locked for other receivers. The maximum value for LockDuration is 5 minutes; the default value is 1 minute.  Box 2: Yes - You can peek at the message in the front of a queue without removing it from the queue by calling the PeekMessage method.  Box 3: Yes - Reference: https://docs.microsoft.com/en-us/azure/storage/queues/storage-dotnet-how-to-use-queues <https://docs.microsoft.com/en-us/dotnet/api/microsoft.servicebus.messaging.queuedescription.lockduration> |

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| Question | You are working for Contoso, Ltd. You define an API Policy object by using the following XML markup:  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: Yes - Use the set-backend-service policy to redirect an incoming request to a different backend than the one specified in the API settings for that operation. Syntax: <set-backend-service base-url="base URL of the backend service" />  Box 2: No - The condition is on 512k, not on 256k.  Box 3: No - The set-backend-service policy changes the backend service base URL of the incoming request to the one specified in the policy. Reference: <https://docs.microsoft.com/en-us/azure/api-management/api-management-transformation-policies> |

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| Question | You are developing a solution that will use Azure messaging services. You need to ensure that the solution uses a publish-subscribe model and eliminates the need for constant polling. What are two possible ways to achieve the goal? Each correct answer presents a complete solution. |
| Answer | * A. Service Bus * B. Event Hub * C. Event Grid * D. Queue |
| Explanation | It is strongly recommended to use available messaging products and services that support a publish-subscribe model, rather than building your own. In Azure, consider using Service Bus or Event Grid. Other technologies that can be used for pub/sub messaging include Redis, RabbitMQ, and Apache Kafka. Reference: <https://docs.microsoft.com/en-us/azure/architecture/patterns/publisher-subscriber> |

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| Question | A company is implementing a publish-subscribe (Pub/Sub) messaging component by using Azure Service Bus. You are developing the first subscription application. In the Azure portal you see that messages are being sent to the subscription for each topic. You create and initialize a subscription client object by supplying the correct details, but the subscription application is still not consuming the messages. You need to ensure that the subscription client processes all messages. Which code segment should you use? |
| Answer | * A. await subscriptionClient.AddRuleAsync(new RuleDescription(RuleDescription.DefaultRuleName, new TrueFilter())); * B. subscriptionClient = new SubscriptionClient(ServiceBusConnectionString, TopicName, SubscriptionName); * C. await subscriptionClient.CloseAsync(); * D. subscriptionClient.RegisterMessageHandler(ProcessMessagesAsync, messageHandlerOptions); |
| Explanation | Using topic client, call RegisterMessageHandler which is used to receive messages continuously from the entity. It registers a message handler and begins a new thread to receive messages. This handler is waited on every time a new message is received by the receiver. subscriptionClient.RegisterMessageHandler(ReceiveMessagesAsync, messageHandlerOptions); Reference: <https://www.c-sharpcorner.com/article/azure-service-bus-topic-and-subscription-pub-sub/> |

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| Question | You have an application that provides weather forecasting data to external partners. You use Azure API Management to publish APIs. You must change the behavior of the API to meet the following requirements: ✑ Support alternative input parameters ✑ Remove formatting text from responses ✑ Provide additional context to back-end services Which types of policies should you implement? To answer, drag the policy types to the correct scenarios. Each policy type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation |  |

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| Question | You are developing an e-commerce solution that uses a microservice architecture. You need to design a communication backplane for communicating transactional messages between various parts of the solution. Messages must be communicated in first-in-first-out (FIFO) order. What should you use? |
| Answer | * A. Azure Storage Queue * B. Azure Event Hub * C. Azure Service Bus * D. Azure Event Grid |
| Explanation | As a solution architect/developer, you should consider using Service Bus queues when: ✑ Your solution requires the queue to provide a guaranteed first-in-first-out (FIFO) ordered delivery. Reference: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-azure-and-service-bus-queues-compared-contrasted> |

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| Question | A company backs up all manufacturing data to Azure Blob Storage. Admins move blobs from hot storage to archive tier storage every month. You must automatically move blobs to Archive tier after they have not been modified within 180 days. The path for any item that is not archived must be placed in an existing queue. This operation must be performed automatically once a month. You set the value of TierAgeInDays to -180. How should you configure the Logic App? To answer, drag the appropriate triggers or action blocks to the correct trigger or action slots. Each trigger or action block may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Reoccurance.. To regularly run tasks, processes, or jobs on specific schedule, you can start your logic app workflow with the built-in Recurrence - Schedule trigger. You can set a date and time as well as a time zone for starting the workflow and a recurrence for repeating that workflow. Set the interval and frequency for the recurrence. In this example, set these properties to run your workflow every week.  Box 2: Condition.. To run specific actions in your logic app only after passing a specified condition, add a conditional statement. This control structure compares the data in your workflow against specific values or fields. You can then specify different actions that run based on whether or not the data meets the condition.  Box 3: Put a message on a queue - The path for any item that is not archived must be placed in an existing queue. Note: Under If true and If false, add the steps to perform based on whether the condition is met. Box 4: ..tier it to Cool or Archive tier. Archive item.  Box 5: List blobs 2 - Reference: <https://docs.microsoft.com/en-us/azure/connectors/connectors-native-recurrence>  <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-control-flow-loops>  <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-control-flow-conditional-statement> |

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| Question | You are developing a Java application that uses Cassandra to store key and value data. You plan to use a new Azure Cosmos DB resource and the Cassandra API in the application. You create an Azure Active Directory (Azure AD) group named Cosmos DB Creators to enable provisioning of Azure Cosmos accounts, databases, and containers. The Azure AD group must not be able to access the keys that are required to access the data. You need to restrict access to the Azure AD group. Which role-based access control should you use? |
| Answer | * A. DocumentDB Accounts Contributor * B. Cosmos Backup Operator * C. Cosmos DB Operator * D. Cosmos DB Account Reader |
| Explanation | Azure Cosmos DB now provides a new RBAC role, Cosmos DB Operator. This new role lets you provision Azure Cosmos accounts, databases, and containers, but can't access the keys that are required to access the data. This role is intended for use in scenarios where the ability to grant access to Azure Active Directory service principals to manage deployment operations for Cosmos DB is needed, including the account, database, and containers. Reference: <https://azure.microsoft.com/en-us/updates/azure-cosmos-db-operator-role-for-role-based-access-control-rbac-is-now-available/> |

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| Question | You are developing an Azure messaging solution. You need to ensure that the solution meets the following requirements: ✑ Provide transactional support. ✑ Provide duplicate detection. ✑ Store the messages for an unlimited period of time. Which two technologies will meet the requirements? Each correct answer presents a complete solution. |
| Answer | * A. Azure Service Bus Topic * B. Azure Service Bus Queue * C. Azure Storage Queue * D. Azure Event Hub |
| Explanation | The Azure Service Bus Queue and Topic has duplicate detection. Enabling duplicate detection helps keep track of the application-controlled MessageId of all messages sent into a queue or topic during a specified time window. Incorrect Answers: C: There is just no mechanism that can query a Storage queue and find out if a message with the same contents is already there or was there before. D: Azure Event Hub does not have duplicate detection Reference: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/duplicate-detection> |

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| Question | You are creating a hazard notification system that has a single signaling server which triggers audio and visual alarms to start and stop. You implement Azure Service Bus to publish alarms. Each alarm controller uses Azure Service Bus to receive alarm signals as part of a transaction. Alarm events must be recorded for audit purposes. Each transaction record must include information about the alarm type that was activated. You need to implement a reply trail auditing solution. Which two actions should you perform? |
| Answer | * A. Assign the value of the hazard message SessionID property to the ReplyToSessionId property. * B. Assign the value of the hazard message MessageId property to the DevileryCount property. * C. Assign the value of the hazard message SessionID property to the SequenceNumber property. * D. Assign the value of the hazard message MessageId property to the CorrelationId property. * E. Assign the value of the hazard message SequenceNumber property to the DeliveryCount property. * F. Assign the value of the hazard message MessageId property to the SequenceNumber property. |
| Explanation | D: CorrelationId: Enables an application to specify a context for the message for the purposes of correlation; for example, reflecting the MessageId of a message that is being replied to. A: ReplyToSessionId: This value augments the ReplyTo information and specifies which SessionId should be set for the reply when sent to the reply entity. Incorrect Answers:  B, E: DeliveryCount - Number of deliveries that have been attempted for this message. The count is incremented when a message lock expires, or the message is explicitly abandoned by the receiver. This property is read-only.  C, E: SequenceNumber - The sequence number is a unique 64-bit integer assigned to a message as it is accepted and stored by the broker and functions as its true identifier. For partitioned entities, the topmost 16 bits reflect the partition identifier. Sequence numbers monotonically increase and are gapless. They roll over to 0 when the 48- 64 bit range is exhausted. This property is read-only. Reference: https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-messages-payloads Connect to and consume Azure services and third-party services |

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| Question | You develop a gateway solution for a public facing news API. The news API back end is implemented as a RESTful service and uses an OpenAPI specification. You need to ensure that you can access the news API by using an Azure API Management service instance. Which Azure PowerShell command should you run? |
| Answer | * A. Import-AzureRmApiManagementApi -Context $ApiMgmtContext -SpecificationFormat "Swagger" -SpecificationPath $SwaggerPath -Path $Path * B. New-AzureRmApiManagementBackend -Context $ApiMgmtContext-Url $Url -Protocol http * C. New-AzureRmApiManagement -ResourceGroupName $ResourceGroup -Name $Name ""Location $Location -Organization $Org -AdminEmail $AdminEmail * D. New-AzureRmApiManagementBackendProxy -Url $ApiUrl |
| Explanation | New-AzureRmApiManagementBackendProxy creates a new Backend Proxy Object which can be piped when creating a new Backend entity. Example: Create a Backend Proxy In-Memory Object PS C:\>$secpassword = ConvertTo-SecureString "PlainTextPassword" -AsPlainText -Force PS C:\>$proxyCreds = New-Object System.Management.Automation.PSCredential ("foo", $secpassword) PS C:\>$credential = New-AzureRmApiManagementBackendProxy -Url "http://12.168.1.1:8080" -ProxyCredential $proxyCreds PS C:\>$apimContext = New-AzureRmApiManagementContext -ResourceGroupName "Api-Default-WestUS" -ServiceName "contoso" PS C:\>$backend = New-AzureRmApiManagementBackend -Context $apimContext -BackendId 123 -Url 'https://contoso.com/awesomeapi' -Protocol http -Title "first backend" -SkipCertificateChainValidation $true -Proxy $credential -Description "backend with proxy server" Creates a Backend Proxy Object and sets up Backend Incorrect Answers: A: The Import-AzureRmApiManagementApi cmdlet imports an Azure API Management API from a file or a URL in Web Application Description Language (WADL), Web Services Description Language (WSDL), or Swagger format. B: New-AzureRmApiManagementBackend creates a new backend entity in Api Management. C: The New-AzureRmApiManagement cmdlet creates an API Management deployment in Azure API Management. Reference: <https://docs.microsoft.com/en-us/powershell/module/azurerm.apimanagement/new-azurermapimanagementbackendproxy?view=azurermps-6.13.0> |

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| Question | You have an application that includes an Azure Web app and several Azure Function apps. Application secrets including connection strings and certificates are stored in Azure Key Vault. Secrets must not be stored in the application or application runtime environment. Changes to Azure Active Directory (Azure AD) must be minimized. You need to design the approach to loading application secrets. What should you do? |
| Answer | * A. Create a single user-assigned Managed Identity with permission to access Key Vault and configure each App Service to use that Managed Identity. * B. Create a single Azure AD Service Principal with permission to access Key Vault and use a client secret from within the App Services to access Key Vault. * C. Create a system assigned Managed Identity in each App Service with permission to access Key Vault. * D. Create an Azure AD Service Principal with Permissions to access Key Vault for each App Service and use a certificate from within the App Services to access Key Vault. |
| Explanation | Use Key Vault references for App Service and Azure Functions. Key Vault references currently only support system-assigned managed identities. User-assigned identities cannot be used. Reference: <https://docs.microsoft.com/en-us/azure/app-service/app-service-key-vault-references> |

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| Question | You provide an Azure API Management managed web service to clients. The back-end web service implements HTTP Strict Transport Security (HSTS). Every request to the backend service must include a valid HTTP authorization header. You need to configure the Azure API Management instance with an authentication policy. Which two policies can you use? |
| Answer | * A. Basic Authentication * B. Digest Authentication * C. Certificate Authentication * D. OAuth Client Credential Grant |
| Explanation |  |

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| Question | You are preparing to deploy a website to an Azure Web App from a GitHub repository. The website includes static content generated by a script. You plan to use the Azure Web App continuous deployment feature. You need to run the static generation script before the website starts serving traffic. What are two possible ways to achieve this goal? Each correct answer presents a complete solution. |
| Answer | * A. Add the path to the static content generation tool to WEBSITE\_RUN\_FROM\_PACKAGE setting in the host.json file. * B. Add a PreBuild target in the websites csproj project file that runs the static content generation script. * C. Create a file named run.cmd in the folder /run that calls a script which generates the static content and deploys the website. * D. Create a file named .deployment in the root of the repository that calls a script which generates the static content and deploys the website. |
| Explanation | A: In Azure, you can run your functions directly from a deployment package file in your function app. The other option is to deploy your files in the d:\home\site \wwwroot directory of your function app (see A above). To enable your function app to run from a package, you just add a WEBSITE\_RUN\_FROM\_PACKAGE setting to your function app settings. Note: The host.json metadata file contains global configuration options that affect all functions for a function app. D: To customize your deployment, include a .deployment file in the repository root. You just need to add a file to the root of your repository with the name .deployment and the content: [config] command = YOUR COMMAND TO RUN FOR DEPLOYMENT this command can be just running a script (batch file) that has all that is required for your deployment, like copying files from the repository to the web root directory for example. Reference: https://github.com/projectkudu/kudu/wiki/Custom-Deployment-Script https://docs.microsoft.com/bs-latn-ba/azure/azure-functions/run-functions-from-deployment-package Develop for Azure storage |

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| Question | You are developing an Azure Function App that processes images that are uploaded to an Azure Blob container. Images must be processed as quickly as possible after they are uploaded, and the solution must minimize latency. You create code to process images when the Function App is triggered. You need to configure the Function App. What should you do? |
| Answer | * A. Use an App Service plan. Configure the Function App to use an Azure Blob Storage input trigger. * B. Use a Consumption plan. Configure the Function App to use an Azure Blob Storage trigger. * C. Use a Consumption plan. Configure the Function App to use a Timer trigger. * D. Use an App Service plan. Configure the Function App to use an Azure Blob Storage trigger. * E. Use a Consumption plan. Configure the Function App to use an Azure Blob Storage input trigger. |
| Explanation | We have to use an Azure Blob storage trigger. In order to ensure the function is invoked immediately , make sure the Azure Function is part of an App service plan and the Always On setting is set as on. |

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| Question | You have an Azure Batch project that processes and converts files and stores the files in Azure storage. You are developing a function to start the batch job. You add the following parameters to the function.  You must ensure that converted files are placed in the container referenced by the outputContainerSasUrl parameter. Files which fail to convert are placed in the container referenced by the failedContainerSasUrl parameter. You need to ensure the files are correctly processed. How should you complete the code segment? |
| Answer |  |
| Explanation | Box 1: CreateJob -  Box 2: TaskSuccess - TaskSuccess: Upload the file(s) only after the task process exits with an exit code of 0. Incorrect: TaskCompletion: Upload the file(s) after the task process exits, no matter what the exit code was.  Box 3: TaskFailure - TaskFailure:Upload the file(s) only after the task process exits with a nonzero exit code.  Box 4: OutputFiles - To specify output files for a task, create a collection of OutputFile objects and assign it to the CloudTask.OutputFiles property when you create the task. References: https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.batch.protocol.models.outputfileuploadcondition <https://docs.microsoft.com/en-us/azure/batch/batch-task-output-files> |

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| Question | You are writing code to create and run an Azure Batch job. You have created a pool of compute nodes. You need to choose the right class and its method to submit a batch job to the Batch service. Which method should you use? |
| Answer | * A. JobOperations.EnableJobAsync(String, IEnumerable<BatchClientBehavior>,CancellationToken) * B. JobOperations.CreateJob() * C. CloudJob.Enable(IEnumerable<BatchClientBehavior>) * D. JobOperations.EnableJob(String,IEnumerable<BatchClientBehavior>) * E. CloudJob.CommitAsync(IEnumerable<BatchClientBehavior>, CancellationToken) |
| Explanation | A Batch job is a logical grouping of one or more tasks. A job includes settings common to the tasks, such as priority and the pool to run tasks on. The app uses the BatchClient.JobOperations.CreateJob method to create a job on your pool. The Commit method submits the job to the Batch service. Initially the job has no tasks. { CloudJob job = batchClient.JobOperations.CreateJob(); job.Id = JobId; job.PoolInformation = new PoolInformation { PoolId = PoolId }; job.Commit(); } ... References: <https://docs.microsoft.com/en-us/azure/batch/quick-run-dotnet> |

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| Question | You are developing Azure WebJobs. You need to recommend a WebJob type for each scenario. Which WebJob type should you recommend? To answer, drag the appropriate WebJob types to the correct scenarios. Each WebJob type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Continuous - Continuous runs on all instances that the web app runs on. You can optionally restrict the WebJob to a single instance.  Box 2: Triggered - Triggered runs on a single instance that Azure selects for load balancing.  Box 3: Continuous - Continuous supports remote debugging. Note: The following table describes the differences between continuous and triggered WebJobs.  References: <https://docs.microsoft.com/en-us/azure/app-service/web-sites-create-web-jobs> |

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| Question | You are developing a software solution for an autonomous transportation system. The solution uses large data sets and Azure Batch processing to simulate navigation sets for entire fleets of vehicles. You need to create compute nodes for the solution on Azure Batch. What should you do? |
| Answer | * A. In the Azure portal, add a Job to a Batch account. * B. In a .NET method, call the method: BatchClient.PoolOperations.CreateJob * C. In Python, implement the class: JobAddParameter * D. In Azure CLI, run the command: az batch pool create * E. In a .NET method, call the method: BatchClient.PoolOperations.CreatePool * F. In Python, implement the class: TaskAddParameter * G. In the Azure CLI, run the command: az batch account create |
| Explanation | A Batch job is a logical grouping of one or more tasks. A job includes settings common to the tasks, such as priority and the pool to run tasks on. The app uses the BatchClient.JobOperations.CreateJob method to create a job on your pool. Note: Step 1: Create a pool of compute nodes. When you create a pool, you specify the number of compute nodes for the pool, their size, and the operating system. When each task in your job runs, it's assigned to execute on one of the nodes in your pool. Step 2: Create a job. A job manages a collection of tasks. You associate each job to a specific pool where that job's tasks will run. Step 3: Add tasks to the job. Each task runs the application or script that you uploaded to process the data files it downloads from your Storage account. As each task completes, it can upload its output to Azure Storage. Incorrect Answers: C, F: To create a Batch pool in Python, the app uses the PoolAddParameter class to set the number of nodes, VM size, and a pool configuration. E: BatchClient.PoolOperations does not have a CreateJob method. References: https://docs.microsoft.com/en-us/azure/batch/quick-run-dotnet <https://docs.microsoft.com/en-us/azure/batch/quick-run-python> |

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| Question | You are deploying an Azure Kubernetes Services (AKS) cluster that will use multiple containers. You need to create the cluster and verify that the services for the containers are configured correctly and available. Which four commands should you use to develop the solution? To answer, move the appropriate command segments from the list of command segments to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: az group create - Create a resource group with the az group create command. An Azure resource group is a logical group in which Azure resources are deployed and managed. Example: The following example creates a resource group named myAKSCluster in the eastus location. az group create --name myAKSCluster --location eastus  Step 2 : az aks create - Use the az aks create command to create an AKS cluster.  Step 3: kubectl apply - To deploy your application, use the kubectl apply command. This command parses the manifest file and creates the defined Kubernetes objects.  Step 4: az aks get-credentials - Configure it with the credentials for the new AKS cluster. Example: az aks get-credentials --name aks-cluster --resource-group aks-resource-group References: <https://docs.bitnami.com/azure/get-started-aks/> |

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| Question | You are preparing to deploy a medical records application to an Azure virtual machine (VM). The application will be deployed by using a VHD produced by an on- premises build server. You need to ensure that both the application and related data are encrypted during and after deployment to Azure. Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: Encrypt the on-premises VHD by using BitLocker without a TPM. Upload the VM to Azure Storage Step 2: Run the Azure PowerShell command Set-AzureRMVMOSDisk To use an existing disk instead of creating a new disk you can use the Set-AzureRMVMOSDisk command. Example: $osDiskName = $vmname+'\_osDisk' $osDiskCaching = 'ReadWrite' $osDiskVhdUri = "https://$stoname.blob.core.windows.net/vhds/"+$vmname+"\_os.vhd" $vm = Set-AzureRmVMOSDisk -VM $vm -VhdUri $osDiskVhdUri -name $osDiskName -Create Step 3: Run the Azure PowerShell command Set-AzureRmVMDiskEncryptionExtension Use the Set-AzVMDiskEncryptionExtension cmdlet to enable encryption on a running IaaS virtual machine in Azure. Incorrect: Not TPM: BitLocker can work with or without a TPM. A TPM is a tamper resistant security chip on the system board that will hold the keys for encryption and check the integrity of the boot sequence and allows the most secure BitLocker implementation. A VM does not have a TPM. References: <https://www.itprotoday.com/iaaspaas/use-existing-vhd-azurerm-vm> |

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| Question | You are creating a script that will run a large workload on an Azure Batch pool. Resources will be reused and do not need to be cleaned up after use. You have the following parameters:  You need to write an Azure CLI script that will create the jobs, tasks, and the pool. In which order should you arrange the commands to develop the solution? To answer, move the appropriate commands from the list of command segments to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: az batch pool create - # Create a new Linux pool with a virtual machine configuration. az batch pool create \ --id mypool \ --vm-size Standard\_A1 \ --target-dedicated 2 \ --image canonical:ubuntuserver:16.04-LTS \ --node-agent-sku-id "batch.node.ubuntu 16.04"  Step 2: az batch job create - # Create a new job to encapsulate the tasks that are added. az batch job create \ --id myjob \ --pool-id mypool  Step 3: az batch task create - # Add tasks to the job. Here the task is a basic shell command. az batch task create \ --job-id myjob \ --task-id task1 \ --command-line "/bin/bash -c 'printenv AZ\_BATCH\_TASK\_WORKING\_DIR'" Step 4: for i in {1..$numberOfJobs} do References: <https://docs.microsoft.com/bs-latn-ba/azure/batch/scripts/batch-cli-sample-run-job> |

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| Question | You are developing an Azure Function App by using Visual Studio. The app will process orders input by an Azure Web App. The web app places the order information into Azure Queue Storage. You need to review the Azure Function App code shown below. |
| Answer |  |
| Explanation | Box 1: No - ExpirationTime - The time that the message expires. InsertionTime - The time that the message was added to the queue.  Box 2: Yes - maxDequeueCount - The number of times to try processing a message before moving it to the poison queue. Default value is 5.  Box 3: Yes - When there are multiple queue messages waiting, the queue trigger retrieves a batch of messages and invokes function instances concurrently to process them. By default, the batch size is 16. When the number being processed gets down to 8, the runtime gets another batch and starts processing those messages. So the maximum number of concurrent messages being processed per function on one virtual machine (VM) is 24.  Box 4: Yes - References: <https://docs.microsoft.com/en-us/azure/azure-functions/functions-bindings-storage-queue> |

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| Question | You are developing a Docker/Go using Azure App Service Web App for Containers. You plan to run the container in an App Service on Linux. You identify a Docker container image to use. None of your current resource groups reside in a location that supports Linux. You must minimize the number of resource groups required. You need to create the application and perform an initial deployment. Which three Azure CLI commands should you use to develop the solution? To answer, move the appropriate commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | You can host native Linux applications in the cloud by using Azure Web Apps. To create a Web App for Containers, you must run Azure CLI commands that create a group, then a service plan, and finally the web app itself.  Step 1: az group create - In the Cloud Shell, create a resource group with the az group create command. Step 2: az appservice plan create In the Cloud Shell, create an App Service plan in the resource group with the az appservice plan create command.  Step 3: az webapp create - In the Cloud Shell, create a web app in the myAppServicePlan App Service plan with the az webapp create command. Don't forget to replace with a unique app name, and <docker-ID> with your Docker ID. References: <https://docs.microsoft.com/mt-mt/azure/app-service/containers/quickstart-docker-go?view=sql-server-ver15> |

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| Question | You are preparing to deploy an Azure virtual machine (VM)-based application. The VMs that run the application have the following requirements: ✑ When a VM is provisioned the firewall must be automatically configured before it can access Azure resources ✑ Supporting services must be installed by using an Azure PowerShell script that is stored in Azure Storage You need to ensure that the requirements are met. Which features should you use? To answer, drag the appropriate features to the correct requirements. Each feature may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | <https://docs.microsoft.com/en-us/azure/automation/automation-hybrid-runbook-worker>  <https://docs.microsoft.com/en-us/azure/virtual-machines/windows/run-command> |

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| Question | Fourth Coffee has an ASP.NET Core web app that runs in Docker. The app is mapped to the www.fourthcoffee.com domain. Fourth Coffee is migrating this application to Azure. You need to provision an App Service Web App to host this docker image and map the custom domain to the App Service web app. A resource group named FourthCoffeePublicWebResourceGroup has been created in the WestUS region that contains an App Service Plan named AppServiceLinuxDockerPlan. Which order should the CLI commands be used to develop the solution? |
| Answer |  |
| Explanation | Step 1: #bin/bash - The appName is used when the webapp-name is created in step 2. Step 2: az webapp config hostname add The webapp-name is used when the webapp is created in step 3.  Step 3: az webapp create - Create a web app. In the Cloud Shell, create a web app in the myAppServicePlan App Service plan with the az webapp create command. Step 4 : az webapp confing container set In Create a web app, you specified an image on Docker Hub in the az webapp create command. This is good enough for a public image. To use a private image, you need to configure your Docker account ID and password in your Azure web app. In the Cloud Shell, follow the az webapp create command with az webapp config container set. References: <https://docs.microsoft.com/en-us/azure/app-service/containers/tutorial-custom-docker-image>  Alternative:  **Explanation**  First set all of the variables  Then create the Azure Web App  Then set the docker image which will be deployed as a container  Then set the DNS name |

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| Question | You develop a serverless application using several Azure Functions. These functions connect to data from within the code. You want to configure tracing for an Azure Function App project. You need to change configuration settings in the host.json file. Which tool should you use? |
| Answer | * A. Visual Studio * B. Azure portal * C. Azure PowerShell * D. Azure Functions Core Tools (Azure CLI) |
| Explanation | The function editor built into the Azure portal lets you update the function.json file and the code file for a function. The host.json file, which contains some runtime- specific configurations, is in the root folder of the function app.  References: <https://docs.microsoft.com/en-us/azure/azure-functions/functions-reference#fileupdate> |

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| Question | You are developing a mobile instant messaging app for a company. The mobile app must meet the following requirements: ✑ Support offline data sync. ✑ Update the latest messages during normal sync cycles. You need to implement Offline Data Sync. Which two actions should you perform? |
| Answer | * A. Retrieve records from Offline Data Sync on every call to the PullAsync method. * B. Retrieve records from Offline Data Sync using an Incremental Sync. * C. Push records to Offline Data Sync using an Incremental Sync. * D. Return the updatedAt column from the Mobile Service Backend and implement sorting by using the column. * E. Return the updatedAt column from the Mobile Service Backend and implement sorting by the message id. |
| Explanation | B: Incremental Sync: the first parameter to the pull operation is a query name that is used only on the client. If you use a non-null query name, the Azure Mobile SDK performs an incremental sync. Each time a pull operation returns a set of results, the latest updatedAt timestamp from that result set is stored in the SDK local system tables. Subsequent pull operations retrieve only records after that timestamp. E (not D): To use incremental sync, your server must return meaningful updatedAt values and must also support sorting by this field. However, since the SDK adds its own sort on the updatedAt field, you cannot use a pull query that has its own orderBy clause. References: <https://docs.microsoft.com/en-us/azure/app-service-mobile/app-service-mobile-offline-data-sync> |

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| Question | You are developing a solution for a hospital to support the following use cases: ✑ The most recent patient status details must be retrieved even if multiple users in different locations have updated the patient record. ✑ Patient health monitoring data retrieved must be the current version or the prior version. ✑ After a patient is discharged and all charges have been assessed, the patient billing record contains the final charges. You provision a Cosmos DB NoSQL database and set the default consistency level for the database account to Strong. You set the value for Indexing Mode to Consistent. You need to minimize latency and any impact to the availability of the solution. You must override the default consistency level at the query level to meet the required consistency guarantees for the scenarios. Which consistency levels should you implement? To answer, drag the appropriate consistency levels to the correct requirements. Each consistency level may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Strong - Strong: Strong consistency offers a linearizability guarantee. The reads are guaranteed to return the most recent committed version of an item. A client never sees an uncommitted or partial write. Users are always guaranteed to read the latest committed write.  Box 2: Bounded staleness - Bounded staleness: The reads are guaranteed to honor the consistent-prefix guarantee. The reads might lag behind writes by at most "K" versions (that is "updates") of an item or by "t" time interval. When you choose bounded staleness, the "staleness" can be configured in two ways: The number of versions (K) of the item The time interval (t) by which the reads might lag behind the writes  Box 3: Eventual - Eventual: There's no ordering guarantee for reads. In the absence of any further writes, the replicas eventually converge. Incorrect Answers: Consistent prefix: Updates that are returned contain some prefix of all the updates, with no gaps. Consistent prefix guarantees that reads never see out-of-order writes. References: <https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels> |

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| Question | You are creating a CLI script that creates an Azure web app related services in Azure App Service. The web app uses the following variables:  You need to automatically deploy code from GitHub to the newly created web app. How should you complete the script? |
| Answer |  |
| Explanation | Box 1: az appservice plan create The azure group creates command successfully returns JSON result. Now we can use resource group to create a azure app service plan  Box 2: az webapp create - Create a new web app..  Box 3: --plan $webappname - ..with the serviceplan we created in step.  Box 4: az webapp deployment - Continuous Delivery with GitHub. Example: az webapp deployment source config --name firstsamplewebsite1 --resource-group websites--repo-url $gitrepo --branch master --git-token $token Box 5: --repo-url $gitrepo --branch master --manual-integration References: <https://medium.com/@satish1v/devops-your-way-to-azure-web-apps-with-azure-cli-206ed4b3e9b1> |

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| Question | You are developing an Azure Web App. You configure TLS mutual authentication for the web app. You need to validate the client certificate in the web app. To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | Accessing the client certificate from App Service. If you are using ASP.NET and configure your app to use client certificate authentication, the certificate will be available through the HttpRequest.ClientCertificate property. For other application stacks, the client cert will be available in your app through a base64 encoded value in the "X-ARR-ClientCert" request header. Your application can create a certificate from this value and then use it for authentication and authorization purposes in your application. References: <https://docs.microsoft.com/en-us/azure/app-service/app-service-web-configure-tls-mutual-auth> |

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| Question | You are developing a .NET Core model-view controller (MVC) application hosted on Azure for a health care system that allows providers access to their information. You develop the following code:  You define a role named SysAdmin. You need to ensure that the application meets the following authorization requirements: ✑ Allow the ProviderAdmin and SysAdmin roles access to the Partner controller regardless of whether the user holds an editor claim of partner. ✑ Limit access to the Manage action of the controller to users with an editor claim of partner who are also members of the SysAdmin role. How should you complete the code? To answer, drag the appropriate code segments to the correct locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Allow the ProviderAdmin and SysAdmin roles access to the Partner controller regardless of whether the user holds an editor claim of partner. Box 2: Limit access to the Manage action of the controller to users with an editor claim of partner who are also members of the SysAdmin role. |

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| Question | You manage several existing Logic Apps. You need to change definitions, add new logic, and optimize these apps on a regular basis. What should you use? To answer, drag the appropriate tools to the correct functionalities. Each tool may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Enterprise Integration Pack After you create an integration account that has partners and agreements, you are ready to create a business to business (B2B) workflow for your logic app with the Enterprise Integration Pack.  Box 2: Code View Editor - To work with logic app definitions in JSON, open the Code View editor when working in the Azure portal or in Visual Studio, or copy the definition into any editor that you want.  Box 3: Logical Apps Designer - You can build your logic apps visually with the Logic Apps Designer, which is available in the Azure portal through your browser and in Visual Studio. References: https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-enterprise-integration-b2b https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-author-definitions <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-overview> |

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| Question | You are implementing an Azure API app that uses built-in authentication and authorization functionality. All app actions must be associated with information about the current user. You need to retrieve the information about the current user. What are two ways to achieve the goal? |
| Answer | * A. HTTP headers * B. environment variables * C. /.auth/me HTTP endpoint * D. /.auth/login endpoint |
| Explanation | A: After App Service Authentication has been configured, users trying to access your API are prompted to sign in with their organizational account that belongs to the same Azure AD as the Azure AD application used to secure the API. After signing in, you are able to access the information about the current user through the HttpContext.Current.User property. C: While the server code has access to request headers, client code can access GET /.auth/me to get the same access tokens ( References: https://docs.microsoft.com/en-us/azure/app-service/app-service-web-tutorial-auth-aad <https://docs.microsoft.com/en-us/sharepoint/dev/spfx/web-parts/guidance/connect-to-api-secured-with-aad> |

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| Question | You are developing a back-end Azure App Service that scales based on the number of messages contained in a Service Bus queue. A rule already exists to scale up the App Service when the average queue length of unprocessed and valid queue messages is greater than 1000. You need to add a new rule that will continuously scale down the App Service as long as the scale up condition is not met. How should you configure the Scale rule? |
| Answer |  |
| Explanation | Box 1: Service bus queue - You are developing a back-end Azure App Service that scales based on the number of messages contained in a Service Bus queue.  Box 2: ActiveMessage Count - ActiveMessageCount: Messages in the queue or subscription that are in the active state and ready for delivery.  Box 3: **Average/Count**  Box 4: Less than or equal to - You need to add a new rule that will continuously scale down the App Service as long as the scale up condition is not met. Box 5: Decrease count by |

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| Question | A company is developing a Java web app. The web app code is hosted in a GitHub repository located at https://github.com/Contoso/webapp. The web app must be evaluated before it is moved to production. You must deploy the initial code release to a deployment slot named staging. You need to create the web app and deploy the code. How should you complete the commands? |
| Answer |  |
| Explanation | Box 1: group - # Create a resource group. az group create --location westeurope --name myResourceGroup  Box 2: appservice plan - # Create an App Service plan in STANDARD tier (minimum required by deployment slots). az appservice plan create --name $webappname --resource-group myResourceGroup --sku S1  Box 3: webapp - # Create a web app. az webapp create --name $webappname --resource-group myResourceGroup \ --plan $webappname  Box 4: webapp deployment slot - #Create a deployment slot with the name "staging". az webapp deployment slot create --name $webappname --resource-group myResourceGroup \ --slot staging  Box 5: webapp deployment source - # Deploy sample code to "staging" slot from GitHub. az webapp deployment source config --name $webappname --resource-group myResourceGroup \ --slot staging --repo-url $gitrepo --branch master --manual-integration References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/cli-deploy-staging-environment> |

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| Question | You have a web app named MainApp. You are developing a triggered App Service background task by using the WebJobs SDK. This task automatically invokes a function code whenever any new data is received in a queue. You need to configure the services. Which service should you use for each scenario? To answer, drag the appropriate services to the correct scenarios. Each service may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: WebJobs - A WebJob is a simple way to set up a background job, which can process continuously or on a schedule. WebJobs differ from a cloud service as it gives you get less fine-grained control over your processing environment, making it a more true PaaS service.  Box 2: WebJobs - Incorrect Answers: Azure Logic Apps is a cloud service that helps you schedule, automate, and orchestrate tasks, business processes, and workflows when you need to integrate apps, data, systems, and services across enterprises or organizations. Logic Apps simplifies how you design and build scalable solutions for app integration, data integration, system integration, enterprise application integration (EAI), and business-to-business (B2B) communication, whether in the cloud, on premises, or both. References: <https://code.msdn.microsoft.com/Processing-Service-Bus-84db27b4> |

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| Question | A company is developing a mobile app for field service employees using Azure App Service Mobile Apps as the backend. The company's network connectivity varies throughout the day. The solution must support offline use and synchronize changes in the background when the app is online app. You need to implement the solution. How should you complete the code segment? |
| Answer |  |
| Explanation | Box 1: var todoTable = client GetSyncTable<TodoItem>() To setup offline access, when connecting to your mobile service, use the method GetSyncTable instead of GetTable (example): IMobileServiceSyncTable todoTable = App.MobileService.GetSyncTable(); / Box 2: await todoTable.PullAsync("allTodoItems",todo.Table.CreateQuery()); Your app should now use IMobileServiceSyncTable (instead of IMobileServiceTable) for CRUD operations. This will save changes to the local database and also keep a log of the changes. When the app is ready to synchronize its changes with the Mobile Service, use the methods PushAsync and PullAsync (example): await App.MobileService.SyncContext.PushAsync(); await todoTable.PullAsync(); References: <https://azure.microsoft.com/es-es/blog/offline-sync-for-mobile-services/> |

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| Question | A company is developing a solution that allows smart refrigerators to send temperature information to a central location. The solution must receive and store messages until they can be processed. You create an Azure Service Bus instance by providing a name, pricing tier, subscription, resource group, and location. You need to complete the configuration. Which Azure CLI or PowerShell command should you run? |
| Answer | A.  B.  C.  D. |
| Explanation | # Create a Service Bus messaging namespace with a unique name. Example: namespaceName=myNameSpace$RANDOM az servicebus namespace create --resource-group $resourceGroupName --name $namespaceName --location eastus References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-quickstart-cli> |

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| Question | You are a developer for a SaaS company that offers many web services. All web services for the company must meet the following requirements: ✑ Use API Management to access the services ✑ Use OpenID Connect for authentication.  Prevent anonymous usage -  A recent security audit found that several web services can be called without any authentication. Which API Management policy should you implement? |
| Answer | * A. validate-jwt * B. jsonp * C. authentication-certificate * D. check-header |
| Explanation | Add the validate-jwt policy to validate the OAuth token for every incoming request. Incorrect Answers: B: The jsonp policy adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients. JSONP is a method used in JavaScript programs to request data from a server in a different domain. JSONP bypasses the limitation enforced by most web browsers where access to web pages must be in the same domain. JSONP - Adds JSON with padding (JSONP) support to an operation or an API to allow cross-domain calls from JavaScript browser-based clients. References: <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-protect-backend-with-aad> |

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| Question | A company backs up all manufacturing data to Azure Blob Storage. Admins move blobs from hot storage to archive tier storage every month. You must automatically move blocks to Archive tier after they have not been accessed for 180 days. The path for any item that is not archived must be placed in an existing queue. This operation must be performed automatically once a month. You set the value of TierAgeInDays to 180. How should you configure the Logic App? To answer, drag the appropriate triggers or action blocks to the correct trigger or action slots. Each trigger or action block may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Recurrence -  Box 2: Insert Entity -  Box 3 (if true): Tier Blob - Box 4: (if false): Leave blank. References: <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-perform-data-operations> |

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| Question | You develop a website. You plan to host the website in Azure. You expect the website to experience high traffic volumes after it is published. You must ensure that the website remains available and responsive while minimizing cost. You need to deploy the website. What should you do? |
| Answer | * A. Deploy the website to a virtual machine. Configure the virtual machine to automatically scale when the CPU load is high. * B. Deploy the website to an App Service that uses the Shared service tier. Configure the App service plan to automatically scale when the CPU load is high. * C. Deploy the website to an App Service that uses the Standard service tier. Configure the App service plan to automatically scale when the CPU load is high. * D. Deploy the website to a virtual machine. Configure a Scale Set to increase the virtual machine instance count when the CPU load is high. |
| Explanation | Windows Azure Web Sites (WAWS) offers 3 modes: Standard, Free, and Shared. Standard mode carries an enterprise-grade SLA (Service Level Agreement) of 99.9% monthly, even for sites with just one instance. Standard mode runs on dedicated instances, making it different from the other ways to buy Windows Azure Web Sites. Incorrect Answers: B: Shared and Free modes do not offer the scaling flexibility of Standard, and they have some important limits. Shared mode, just as the name states, also uses shared Compute resources, and also has a CPU limit. So, while neither Free nor Shared is likely to be the best choice for your production environment due to these limits. |

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| Question | A company is developing a Node.js web app. The web app code is hosted in a GitHub repository located at https://github.com/TailSpinToys/weapp. The web app must be reviewed before it is moved to production. You must deploy the initial code release to a deployment slot named review. You need to create the web app and deploy the code. How should you complete the commands? To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | The New-AzResourceGroup cmdlet creates an Azure resource group. The New-AzAppServicePlan cmdlet creates an Azure App Service plan in a given location The New-AzWebApp cmdlet creates an Azure Web App in a given a resource group The New-AzWebAppSlot cmdlet creates an Azure Web App slot. References: https://docs.microsoft.com/en-us/powershell/module/az.resources/new-azresourcegroup?view=azps-2.3.2 https://docs.microsoft.com/en-us/powershell/module/az.websites/new-azappserviceplan?view=azps-2.3.2 https://docs.microsoft.com/en-us/powershell/module/az.websites/new-azwebapp?view=azps-2.3.2 <https://docs.microsoft.com/en-us/powershell/module/az.websites/new-azwebappslot?view=azps-2.3.2> |

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| Question | You are implementing a software as a service (SaaS) ASP.NET Core web service that will run as an Azure Web App. The web service will use an on-premises SQL Server database for storage. The web service also includes a WebJob that processes data updates. Four customers will use the web service. ✑ Each instance of the WebJob processes data for a single customer and must run as a singleton instance. ✑ Each deployment must be tested by using deployment slots prior to serving production data. ✑ Azure costs must be minimized. ✑ Azure resources must be located in an isolated network. You need to configure the App Service plan for the Web App. How should you configure the App Service plan? |
| Answer |  |
| Explanation | Number of VM instances: 4 - You are not charged extra for deployment slots.  Pricing tier: Isolated - The App Service Environment (ASE) is a powerful feature offering of the Azure App Service that gives network isolation and improved scale capabilities. It is essentially a deployment of the Azure App Service into a subnet of a customer's Azure Virtual Network (VNet). References: <https://azure.microsoft.com/sv-se/blog/announcing-app-service-isolated-more-power-scale-and-ease-of-use/> |

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| Question | A company develops a series of mobile games. All games use a single leaderboard service. You have the following requirements: ✑ Code should be scalable and allow for growth. ✑ Each record must consist of a playedId, gameId, score, and time played. ✑ When users reach a new high score, the system will save the new score using the SaveScore function below. ✑ Each game is assigned and Id based on the series title. You plan to store customer information in an Azure Cosmos database. The following data already exists in the database:  You develop the following code to save scores in the database. (line numbers are included for reference only.)  You develop the following code to query the database. (line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: Yes - Code for CosmosDB, example: // Parse the connection string and return a reference to the storage account. CloudStorageAccount storageAccount = CloudStorageAccount.Parse( CloudConfigurationManager.GetSetting("StorageConnectionString")); // Create the table client. CloudTableClient tableClient = storageAccount.CreateCloudTableClient(); // Retrieve a reference to the table. CloudTable table = tableClient.GetTableReference("people"); // Create the TableOperation object that inserts the customer entity. TableOperation insertOperation = TableOperation.Insert(customer1);  Box 2: No - A new record will always be added as TableOperation.Insert is used, instead of TableOperation.InsertOrReplace.  Box 3: No - No partition key is used.  Box 4: Yes - References: <https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-dotnet> |

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| Question | You are working for a company that designs mobile applications. They maintain a server where player records are assigned to their different games. The tracking system is new and in development. The application uses Entity Framework to connect to an Azure Database. The database holds a Player table and Game table. When adding a player, the code should insert a new player record, and add a relationship between an existing game record and the new player record. The application will call CreatePlayerWithGame with the correct gameIdand the playerId to start the process. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: Yes - Box 2: No - Box 3: Yes - Box 4: No - Many-to-many relationships without an entity class to represent the join table are not yet supported. However, you can represent a many-to-many relationship by including an entity class for the join table and mapping two separate one-to-many relationships. protected override void OnModelCreating(ModelBuilder modelBuilder) { modelBuilder.Entity<PostTag>() .HasKey(t => new { t.PostId, t.TagId }); modelBuilder.Entity<PostTag>() .HasOne(pt => pt.Post) .WithMany(p => p.PostTags) .HasForeignKey(pt => pt.PostId); modelBuilder.Entity<PostTag>() .HasOne(pt => pt.Tag) .WithMany(t => t.PostTags) .HasForeignKey(pt => pt.TagId); } } |

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| Question | You use Azure Table storage to store customer information for an application. The data contains customer details and is partitioned by last name. You need to create a query that returns all customers with the last name Smith. Which code segment should you use? |
| Answer | * A. TableQuery.GenerateFilterCondition("PartitionKey", Equals, "Smith") * B. TableQuery.GenerateFilterCondition("LastName", Equals, "Smith") * C. TableQuery.GenerateFilterCondition("PartitionKey", QueryComparisons.Equal, "Smith") * D. TableQuery.GenerateFilterCondition("LastName", QueryComparisons.Equal, "Smith") |
| Explanation | Retrieve all entities in a partition. The following code example specifies a filter for entities where 'Smith' is the partition key. This example prints the fields of each entity in the query results to the console. Construct the query operation for all customer entities where PartitionKey="Smith". TableQuery<CustomerEntity> query = new TableQuery<CustomerEntity>().Where(TableQuery.GenerateFilterCondition("PartitionKey", QueryComparisons.Equal, "Smith")); References: <https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-dotnet> |

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| Question | You are developing an app that manages users for a video game. You plan to store the region, email address, and phone number for the player. Some players may not have a phone number. The player's region will be used to load-balance data. Data for the app must be stored in Azure Table Storage. You need to develop code to retrieve data for an individual player. How should you complete the code? |
| Answer |  |
| Explanation | Box 1: region - The player's region will be used to load-balance data. Choosing the PartitionKey. The core of any table's design is based on its scalability, the queries used to access it, and storage operation requirements. The PartitionKey values you choose will dictate how a table will be partitioned and the type of queries that can be used. Storage operations, in particular inserts, can also affect your choice of PartitionKey values.  Box 2: email - Not phone number some players may not have a phone number.  Box 3: CloudTable - Box 4 : TableOperation query =..  Box 5: TableResult - References: <https://docs.microsoft.com/en-us/rest/api/storageservices/designing-a-scalable-partitioning-strategy-for-azure-table-storage> |

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| Question | You are developing a data storage solution for a social networking app. The solution requires a mobile app that stores user information using Azure Table Storage. You need to develop code that can insert multiple sets of user information. How should you complete the code? |
| Answer |  |
| Explanation | Box 1, Box 2: TableBatchOperation Create the batch operation. TableBatchOperation op = new TableBatchOperation();  Box 3: ExecuteBatch - / Execute the batch operation. table.ExecuteBatch(op); Note: You can insert a batch of entities into a table in one write operation. Some other notes on batch operations: You can perform updates, deletes, and inserts in the same single batch operation. A single batch operation can include up to 100 entities. All entities in a single batch operation must have the same partition key. While it is possible to perform a query as a batch operation, it must be the only operation in the batch. References: <https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-dotnet> |

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| Question | You must implement Application Insights instrumentation capabilities utilizing the Azure Mobile Apps SDK to provide meaningful analysis of user interactions with a molbile app. You need to capture the data required to implement the Usage Analytics feature of Application Insights. Which three data values should you capture? |
| Answer | * A. Trace * B. Session Id * C. Exception * D. User Id * E. Events |
| Explanation | Application Insights is a service for monitoring the performance and usage of your apps. This module allows you to send telemetry of various kinds (events, traces, etc.) to the Application Insights service where your data can be visualized in the Azure Portal. Application Insights manages the ID of a session for you. References: <https://github.com/microsoft/ApplicationInsights-Android> |

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| Question | You are implementing an order processing system. A point of sale application publishes orders to topics in an Azure Service Bus queue. The Label property for the topic includes the following data:  The system has the following requirements for subscriptions:  You need to implement filtering and maximize throughput while evaluating filters. Which filter types should you implement? To answer, drag the appropriate filter types to the correct subscription. Each filter type may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | FutureOrders: SQLFilter - HighPriortyOrders: CorrelationFilter  CorrelationID only -  InternationalOrders: SQLFilter - Country NOT USA requires an SQL Filter  HighQuantityOrders: SQLFilter - Need to use relational operators so an SQL Filter is needed.  AllOrders: No Filter - SQL Filter: SQL Filters - A SqlFilter holds a SQL-like conditional expression that is evaluated in the broker against the arriving messages' user-defined properties and system properties. All system properties must be prefixed with sys. in the conditional expression. The SQL-language subset for filter conditions tests for the existence of properties (EXISTS), as well as for null-values (IS NULL), logical NOT/AND/OR, relational operators, simple numeric arithmetic, and simple text pattern matching with LIKE. Correlation Filters - A CorrelationFilter holds a set of conditions that are matched against one or more of an arriving message's user and system properties. A common use is to match against the CorrelationId property, but the application can also choose to match against ContentType, Label, MessageId, ReplyTo, ReplyToSessionId, SessionId, To, and any user-defined properties. A match exists when an arriving message's value for a property is equal to the value specified in the correlation filter. For string expressions, the comparison is case-sensitive. When specifying multiple match properties, the filter combines them as a logical AND condition, meaning for the filter to match, all conditions must match. Boolean filters - The TrueFilter and FalseFilter either cause all arriving messages (true) or none of the arriving messages (false) to be selected for the subscription. References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/topic-filters> |

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| Question | Your company has several websites that use a company logo image. You use Azure Content Delivery Network (CDN) to store the static image. You need to determine the correct process of how the CDN and the Point of Presence (POP) server will distribute the image and list the items in the correct order. In which order do the actions occur? |
| Answer |  |
| Explanation | Step 1: A user requests the image.. A user requests a file (also called an asset) by using a URL with a special domain name, such as <endpoint name>.azureedge.net. This name can be an endpoint hostname or a custom domain. The DNS routes the request to the best performing POP location, which is usually the POP that is geographically closest to the user. Step 2: If no edge servers in the POP have the.. If no edge servers in the POP have the file in their cache, the POP requests the file from the origin server. The origin server can be an Azure Web App, Azure Cloud Service, Azure Storage account, or any publicly accessible web server. Step 3: The origin server returns the.. The origin server returns the file to an edge server in the POP. An edge server in the POP caches the file and returns the file to the original requestor (Alice). The file remains cached on the edge server in the POP until the time-to-live (TTL) specified by its HTTP headers expires. If the origin server didn't specify a TTL, the default TTL is seven days. Step 4: Subsequent requests for.. Additional users can then request the same file by using the same URL that the original user used, and can also be directed to the same POP. If the TTL for the file hasn't expired, the POP edge server returns the file directly from the cache. This process results in a faster, more responsive user experience. References: <https://docs.microsoft.com/en-us/azure/cdn/cdn-overview> |

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| Question | You develop a solution that uses an Azure SQL Database to store user information for a mobile app. The app stores sensitive information about users. You need to hide sensitive information from developers that query the data for the mobile app. Which three items must you identify when configuring dynamic data masking? |
| Answer | * A. Column * B. Table * C. Trigger * D. Index * E. Schema |
| Explanation | In the Dynamic Data Masking configuration page, you may see some database columns that the recommendations engine has flagged for masking. In order to accept the recommendations, just click Add Mask for one or more columns and a mask is created based on the default type for this column. You can change the masking function by clicking on the masking rule and editing the masking field format to a different format of your choice.  References: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-dynamic-data-masking-get-started-portal> |

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| Question | You store customer information in an Azure Cosmos DB. The following data already exists in the database:  You develop the following code. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Box 1: No - Only the second row is returned thank to the Email filter condition.  Box 2: Yes - This also returns the second row. |

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| Question | A company uses Azure SQL Database to store data for an app. The data includes sensitive information. You need to implement measures that allow only members of the managers group to see sensitive information. Which two actions should you perform? |
| Answer | * A. Include the managers group. * B. Exclude the managers group. * C. Exclude the administrators group. * D. Navigate to the following URL: * E. Run the following Azure PowerShell command: |
| Explanation | Dynamic data masking helps prevent unauthorized access to sensitive data by enabling customers to designate how much of the sensitive data to reveal with minimal impact on the application layer. SQL users excluded from masking - A set of SQL users or AAD identities that get unmasked data in the SQL query results. Note: The New-AzureRmSqlDatabaseDataMaskingRule cmdlet creates a data masking rule for an Azure SQL database. References: <https://docs.microsoft.com/en-us/powershell/module/azurerm.sql/new-azurermsqldatabasedatamaskingrule?view=azurermps-6.13.0> |

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| Question | You are developing a ticket reservation system for an airline. The storage solution for the application must meet the following requirements: ✑ Ensure at least 99/99% availability and provide low latency. ✑ Accept reservations even in network outages or other unforseen failures ✑ Process reservations in the exact sequence as reservation are submitted to minimize overbooking or selling the same seat to multiple travelers. ✑ Allow simultaneous and out-of-order reservations with a maximum five-second tolerance window. You provision a resource group named airlineResourceGroup in the Azure South-Central US region. You need to provision a SQL API Cosmos DB account to support the app. How should you complete the Azure CLI commands? |
| Answer |  |
| Explanation | Box 1: Strong - Strong consistency offers a linearizability guarantee. The reads are guaranteed to return the most recent committed version of an item. A client never sees an uncommitted or partial write. Users are always guaranteed to read the latest committed write. " Process reservations in the exact sequence as reservation are submitted to minimize overbooking or selling the same seat to multiple travelers." Box 2: Enable-automatic-failover For multi-region Cosmos accounts that are configured with a single-write region, enable automatic-failover by using Azure CLI or Azure portal. After you enable automatic failover, whenever there is a regional disaster, Cosmos DB will automatically failover your account. " Accept reservations even in network outages or other unforseen failures"  Box 3: southcentralus - " You provision a resource group named airlineResourceGroup in the Azure South-Central US region." References: https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels <https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/cosmos-db/high-availability.md> |

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| Question | You develop an app that allows users to upload photos and videos to Azure storage. The app uses a storage REST API call to upload the media to a blob storage account named Account1. You have blob storage containers named Container1 and Container2. Uploading of videos occurs on an irregular basis. You need to copy specific blobs from Container1 to Container2 in real time when specific requirements are met, excluding backup blob copies. What should you do? |
| Answer | * A. Download the blob to a virtual machine and then upload the blob to Container2. * B. Run the Azure PowerShell command Start-AzureStorageBlobCopy. * C. Copy blobs to Container2 by using the Put Blob operation of the Blob Service REST API.   D. Use AzCopy with the Snapshot switch blobs to Container2 |
| Explanation | The Start-AzureStorageBlobCopy cmdlet starts to copy a blob.  Example 1: Copy a named blob - C:\PS>Start-AzureStorageBlobCopy -SrcBlob "ContosoPlanning2015" -DestContainer "ContosoArchives" -SrcContainer "ContosoUploads" This command starts the copy operation of the blob named ContosoPlanning2015 from the container named ContosoUploads to the container named ContosoArchives. References: <https://docs.microsoft.com/en-us/powershell/module/azure.storage/start-azurestorageblobcopy?view=azurermps-6.13.0> |

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| Question | You have an app that stores player scores for an online game. The app stores data in Azure tables using a class named PlayerScore as the table entity. The table is populated with 100,000 records. You are reviewing the following section of code that is intended to retrieve 20 records where the player score exceeds 15,000. (Line numbers are included for reference only.)  You have the following code. (Line numbers are included for reference only.)  You store customer information in an Azure Cosmos database. The following data already exists in the database:  You develop the following code. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: No -  Box 2: Yes - The TableQuery.Take method defines the upper bound for the number of entities the query returns. Example: query.Take(10);  Box 3: Yes -  Box 4: Yes - References: <https://www.vkinfotek.com/azureqa/how-do-i-query-azure-table-storage-using-tablequery-class.html> |

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| Question | You develop and deploy a Java RESTful API to Azure App Service. You open a browser and navigate to the URL for the API. You receive the following error message:  You need to resolve the error. What should you do? |
| Answer | * A. Bind an SSL certificate * B. Enable authentication * C. Enable CORS * D. Map a custom domain * E. Add a CDN |
| Explanation | We need to enable Cross-Origin Resource Sharing (CORS). References: <https://medium.com/@xinganwang/a-practical-guide-to-cors-51e8fd329a1f> |

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| Question | Your company is migrating applications to Azure. The IT department must allow internal developers to communicate with Microsoft support. The service agents of the IT department must only have view resources and create support ticket permissions to all subscriptions. A new custom role must be created by reusing a default role definition and changing the permissions. You need to create the custom role. |
| Answer |  |
| Explanation | Box 1: Set-AzureRmRoleDefinition Input-File C:\SupportRole.json The Set-AzureRmRoleDefinition cmdlet updates an existing custom role in Azure Role-Based Access Control. Provide the updated role definition as an input to the command as a JSON file or a PSRoleDefinition object. The role definition for the updated custom role MUST contain the Id and all other required properties of the role even if they are not updated: DisplayName, Description, Actions, AssignableScope Box 2: "\*/read\*."\* Microsoft.Support/\*" Microsoft.Support/\* Create and manage support tickets "Microsoft.Support" role definition azure Incorrect Answers: Get-AzureRmRoleDefinition. The Get-AzureRmRoleDefinition command does not have an action section. First, use the Get-AzureRmRoleDefinition command to retrieve the custom role that you wish to modify. Then, modify the properties that you wish to change. Finally, save the role definition using the Set-AzureRmRoleDefinition command. References: <https://docs.microsoft.com/en-us/azure/role-based-access-control/custom-roles-powershell> |

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| Question | You are developing an internal website for employees to view sensitive data. The website uses Azure Active Directory (AAD) for authentication. You need to implement multifactor authentication for the website. What should you do? Each correct answer presents part of the solution. |
| Answer | * A. Upgrade to Azure AD Premium. * B. In Azure AD conditional access, enable the baseline policy. * C. In Azure AD, create a new conditional access policy.   D. In Azure AD, enable application proxy   * E. Configure the website to use Azure AD B2C. |
| Explanation | A: Multi-Factor Authentication comes as part of the following offerings: ✑ Azure Active Directory Premium licenses - Full featured use of Azure Multi-Factor Authentication Service (Cloud) or Azure Multi-Factor Authentication Server (On-premises). ✑ Multi-Factor Authentication for Office 365 ✑ Azure Active Directory Global Administrators C: MFA Enabled by conditional access policy. It is the most flexible means to enable two-step verification for your users. Enabling using conditional access policy only works for Azure MFA in the cloud and is a premium feature of Azure AD. References: <https://docs.microsoft.com/en-us/azure/active-directory/authentication/howto-mfa-getstarted> |

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| Question | You plan to deploy a new application to a Linux virtual machine (VM) that is hosted in Azure. The entire VM must be secured at rest by using industry-standard encryption technology to address organizational security and compliance requirements. You need to configure Azure Disk Encryption for the VM. How should you complete the Azure CLI commands? |
| Answer |  |
| Explanation | Box 1: keyvault - Create an Azure Key Vault with az keyvault create and enable the Key Vault for use with disk encryption. Specify a unique Key Vault name for keyvault\_name as follows: keyvault\_name=myvaultname$RANDOM az keyvault create \ --name $keyvault\_name \ --resource-group $resourcegroup \ --location eastus \ --enabled-for-disk-encryption True  Box 2: keyvault key - The Azure platform needs to be granted access to request the cryptographic keys when the VM boots to decrypt the virtual disks. Create a cryptographic key in your Key Vault with az keyvault key create. The following example creates a key named myKey: az keyvault key create \ --vault-name $keyvault\_name \ --name myKey \ --protection software  Box 3: vm - Create a VM with az vm create. Only certain marketplace images support disk encryption. The following example creates a VM named myVM using an Ubuntu 16.04 LTS image: az vm create \ --resource-group $resourcegroup \ --name myVM \ --image Canonical:UbuntuServer:16.04-LTS:latest \ --admin-username azureuser \ --generate-ssh-keys \  Box 4: vm encryption - Encrypt your VM with az vm encryption enable: az vm encryption enable \ --resource-group $resourcegroup \ --name myVM \ --disk-encryption-keyvault $keyvault\_name \  --key-encryption-key myKey \ --volume-type all Note: seems to an error in the question. Should have enable instead of create.  Box 5: all - Encrypt both data and operating system. References: <https://docs.microsoft.com/bs-latn-ba/azure/virtual-machines/linux/encrypt-disks> |

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| Question | You are developing an Azure App Service hosted ASP.NET Core web app to deliver video on-demand streaming media. You enable an Azure Content Delivery Network (CDN) Standard for the web endpoint. Customer videos are downloaded from the web app by using the following example URL:http//www.contoso.com/ content.p4?quality=1 All media content must expire from the cache after one hour. Customer videos with varying quality must be delivered to the closest regional point of presence (POP) node. You need to configure Azure CDN caching rules. Which options should you use? |
| Answer |  |
| Explanation | Box 1: Override - Override: Ignore origin-provided cache duration; use the provided cache duration instead. This will not override cache-control: no-cache. Set if missing: Honor origin-provided cache-directive headers, if they exist; otherwise, use the provided cache duration. Incorrect: Bypass cache: Do not cache and ignore origin-provided cache-directive headers.  Box 2: 1 hour - All media content must expire from the cache after one hour.  Box 3: Cache every unique URL - Cache every unique URL: In this mode, each request with a unique URL, including the query string, is treated as a unique asset with its own cache. For example, the response from the origin server for a request for example.ashx?q=test1 is cached at the POP node and returned for subsequent caches with the same query string. A request for example.ashx?q=test2 is cached as a separate asset with its own time-to-live setting. Incorrect Answers: Bypass caching for query strings: In this mode, requests with query strings are not cached at the CDN POP node. The POP node retrieves the asset directly from the origin server and passes it to the requestor with each request. Ignore query strings: Default mode. In this mode, the CDN point-of-presence (POP) node passes the query strings from the requestor to the origin server on the first request and caches the asset. All subsequent requests for the asset that are served from the POP ignore the query strings until the cached asset expires. References: <https://docs.microsoft.com/en-us/azure/cdn/cdn-query-string> |

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| Question | You have an Azure App Services Web App Azure SQL Database instance Azure Storage Account, and an Azure Redis Cache instance in a resource group. A developer must be able to publish code to the web app. You must grant the developer the Contribute role to the web app. You need to grant the role. Which two commands can you use? |
| Answer | * A. az role assignment create * B. az role definition create * C. New-AzureRmRoleAssignment   D. New-AzureRmRoleDefinition |
| Explanation | A: The az role assignment create command creates a new role assignment for a user, group, or service principal. Example: Create role assignment for an assignee. az role assignment create --assignee sp\_name --role a\_role C: The New-AzureRmRoleAssignment command assigns the specified RBAC role to the specified principal, at the specified scope. Incorrect Answers: B, D: Creates a custom role in Azure RBAC. References: https://docs.microsoft.com/en-us/cli/azure/role/assignment?view=azure-cli-latest#az-role-assignment-create <https://docs.microsoft.com/en-us/powershell/module/azurerm.resources/new-azurermroleassignment?view=azurermps-6.13.0> |

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| Question | You provide an Azure API Management managed web service to clients. The back-end web service implements HTTP Strict Transport Security (HSTS). Every request to the backend service must include a valid HTTP authorization header. You need to configure the Azure API Management instance with an authentication policy. Which two policies can you use? |
| Answer | * A. OAuth Client Credential Grant * B. Basic Authentication * C. Certificate Authentication * D. Digest Authentication |
| Explanation |  |

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| Question | You maintain an existing Azure SQL Database instance. Management of the database is performed by an external party. All cryptographic keys are stored in an Azure Key Vault. You must ensure that the external party cannot access the data in the SSN column of the Person table. Will each protection method meet the requirement? To answer, drag the appropriate responses to the correct protection methods. Each response may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Yes - You can configure Always Encrypted for individual database columns containing your sensitive data. When setting up encryption for a column, you specify the information about the encryption algorithm and cryptographic keys used to protect the data in the column.  Box 2: No -  Box 3: Yes - In SQL Database, the VIEW permissions are not granted by default to the public fixed database role. This enables certain existing, legacy tools (using older versions of DacFx) to work properly. Consequently, to work with encrypted columns (even if not decrypting them) a database administrator must explicitly grant the two VIEW permissions.  Box 4: No - All cryptographic keys are stored in an Azure Key Vault. References: <https://docs.microsoft.com/en-us/sql/relational-databases/security/encryption/always-encrypted-database-engine> |

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| Question | You develop an Azure web app. You monitor performance of the web app by using Application Insights. You need to ensure the cost for Application Insights does not exceed a preset budget. What should you do? |
| Answer | * A. Implement ingestions sampling using the Application Insights SDK. * B. Set a daily cap for the Application Insights instance. * C. Implement ingestion sampling using the Azure portal. * D. Implement adaptive sampling using the Azure portal. * E. Implement adaptive sampling using the Application Insights SDK. |
| Explanation | Sampling is an effective way to reduce charges and stay within your monthly quota. You can set sampling manually, either in the portal on the Usage and estimated costs page; or in the ASP.NET SDK in the .config file; or in the Java SDK in the ApplicationInsights.xml file, to also reduce the network traffic. Adaptive sampling is the default for the ASP.NET SDK. Adaptive sampling automatically adjusts to the volume of telemetry that your app sends. It operates automatically in the SDK in your web app so that telemetry traffic on the network is reduced. But for hard control daily cap is required Incorrect Answers: B: You can use the daily volume cap to limit the data collected. To change the daily cap, in the Configure section of your Application Insights resource, in the Usage and estimated costs pane, select Daily Cap. References: <https://docs.microsoft.com/en-us/azure/azure-monitor/app/sampling> |

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| Question | You are developing an ASP.NET Core Web API web service. The web service uses Azure Application Insights for all telemetry and dependency tracking. The web service reads and writes data to a database other than Microsoft SQL Server. You need to ensure that dependency tracking works for calls to the third-party database. Which two Dependency Telemetry properties should you store in the database? |
| Answer | * A. Telemetry.Context.Operation.Id * B. Telemetry.Name * C. Telemetry.Context.Cloud.RoleInstance * D. Telemetry.Context.Session.Id * E. Telemetry.Id |
| Explanation | <https://docs.microsoft.com/en-us/azure/azure-monitor/app/custom-operations-tracking> |

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| Question | You are creating a hazard notification system that has a single signaling server which triggers audio and visual alarms to start and stop. You implement Azure Service Bus to publish alarms. Each alarm controller uses Azure Service Bus to receive alarm signals as part of a transaction. Alarm events must be recorded for audit purposes. Each transaction record must include information about the alarm type that was activated. You need to implement a reply trail auditing solution. Which two actions should you perform? |
| Answer | * A. Assign the value of the hazard message MessageId property to the DeliveryCount property. * B. Assign the value of the hazard message SequenceNumber property to the DeliveryCount property. * C. Assign the value of the hazard message MessageId property to the SequenceNumber property. * D. Assign the value of the hazard message MessageId property to the CorrelationId property. * E. Assign the value of the hazard message SessionID property to the SequenceNumber property..   F. Assign the value of the hazard message SessionID property to the ReplyToSessionId property |
| Explanation | D: CorrelationId: Enables an application to specify a context for the message for the purposes of correlation; for example, reflecting the MessageId of a message that is being replied to. F: ReplyToSessionId: This value augments the ReplyTo information and specifies which SessionId should be set for the reply when sent to the reply entity. Incorrect Answers:  A, B: DeliveryCount - Number of deliveries that have been attempted for this message. The count is incremented when a message lock expires, or the message is explicitly abandoned by the receiver. This property is read-only.  C, E: SequenceNumber - The sequence number is a unique 64-bit integer assigned to a message as it is accepted and stored by the broker and functions as its true identifier. For partitioned entities, the topmost 16 bits reflect the partition identifier. Sequence numbers monotonically increase and are gapless. They roll over to 0 when the 48- 64 bit range is exhausted. This property is read-only. References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-messages-payloads> |

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| Question | You are developing a project management service by using ASP.NET. The service hosts conservations, files, to-do lists, and a calendar that users can interact with at any time. The application uses Azure Search for allowing users to search for keywords in the project data. You need to implement code that creates the object which is used to create indexes in the Azure Search service. Which two objects should you use? |
| Answer | * A. SearchCredentials * B. SearchIndexClient * C. SearchServiceClient * D. SearchService |
| Explanation | The various client libraries define classes like Index, Field, and Document, as well as operations like Indexes.Create and Documents.Search on the SearchServiceClient and SearchIndexClient classes. Example: The sample application we'll be exploring creates a new index named "hotels", populates it with a few documents, then executes some search queries. Here is the main program, showing the overall flow: / This sample shows how to delete, create, upload documents and query an index static void Main(string[] args) { IConfigurationBuilder builder = new ConfigurationBuilder().AddJsonFile("appsettings.json"); IConfigurationRoot configuration = builder.Build(); SearchServiceClient serviceClient = CreateSearchServiceClient(configuration); Console.WriteLine("{0}", "Deleting index...\n"); DeleteHotelsIndexIfExists(serviceClient); Console.WriteLine("{0}", "Creating index...\n"); CreateHotelsIndex(serviceClient); ISearchIndexClient indexClient = serviceClient.Indexes.GetClient("hotels"); References: <https://docs.microsoft.com/en-us/azure/search/search-howto-dotnet-sdk> |

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| Question | You develop a web app that uses the tier D1 app service plan by using the Web App feature of Microsoft Azure App Service. Spikes in traffic have caused increases in page load times. You need to ensure that the web app automatically scales when CPU load is about 85 percent and minimize costs. Which four actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order. |
| Answer |  |
| Explanation | Step 1: Configure the web app to the Standard App Service Tier The Standard tier supports auto-scaling, and we should minimize the cost. Step 2: Enable autoscaling on the web app  First enable autoscale -  Step 3: Add a scale rule -  Step 4: Add a Scale condidation - References: https://docs.microsoft.com/en-us/azure/monitoring-and-diagnostics/monitoring-autoscale-get-started <https://azure.microsoft.com/en-us/pricing/details/app-service/plans/> |

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| Question | You are developing an ASP.NET Core Web API web service that uses Azure Application Insights to monitor performance and track events. You need to enable logging and ensure that log messages can be correlated to events tracked by Application Insights. How should you complete the code? To answer, drag the appropriate code segments to the correct locations. Each code segment may be used once, more than once, or not at all. |
| Answer |  |
| Explanation | Box 1: ApplicationInsightsLoggerOptions If you want to include the EventId and EventName properties, then add the following to the ConfigureServices method: services .AddOptions<ApplicationInsightsLoggerOptions>() .Configure(o => o.IncludeEventId = true);  Box 2: IncludeEventID -  Box 3: ApplicationServices - In Asp.Net core apps it turns out that trace logs do not show up in Application Insights out of the box. We need to add the following code snippet to our Configure method in Startup.cs: loggerFactory.AddApplicationInsights(app.ApplicationServices, logLevel); References: <https://blog.computedcloud.com/enabling-application-insights-trace-logging-in-asp-net-core/> |

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| Question | You develop an ASP.NET Core MVC application. You configure the application to track webpages and custom events. You need to identify trends in application usage. Which Azure Application Insights Usage Analysis features should you use? To answer, drag the appropriate features to the correct requirements. Each feature may be used once, more than once, or not at all |
| Answer |  |
| Explanation | Box1: Users -  Box 2: Impact - One way to think of Impact is as the ultimate tool for settling arguments with someone on your team about how slowness in some aspect of your site is affecting whether users stick around. While users may tolerate a certain amount of slowness, Impact gives you insight into how best to balance optimization and performance to maximize user conversion.  Box 3: Retention - The retention feature in Azure Application Insights helps you analyze how many users return to your app, and how often they perform particular tasks or achieve goals. For example, if you run a game site, you could compare the numbers of users who return to the site after losing a game with the number who return after winning. This knowledge can help you improve both your user experience and your business strategy.  Box 4: User flows - The User Flows tool visualizes how users navigate between the pages and features of your site. It's great for answering questions like: How do users navigate away from a page on your site? What do users click on a page on your site? Where are the places that users churn most from your site? Are there places where users repeat the same action over and over? Incorrect Answers: Funnel: If your application involves multiple stages, you need to know if most customers are progressing through the entire process, or if they are ending the process at some point. The progression through a series of steps in a web application is known as a funnel. You can use Azure Application Insights Funnels to gain insights into your users, and monitor step-by-step conversion rates. References: <https://docs.microsoft.com/en-us/azure/azure-monitor/app/usage-impact> |

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| Question | A company is developing a gaming platform. Users can join teams to play online and see leaderboards that include player statistics. The solution includes an entity named Team. You plan to implement an Azure Redis Cache instance to improve the efficiency of data operations for entities that rarely change. You need to invalidate the cache when team data is changed. How should you complete the code? To answer, select the appropriate options in the answer area. |
| Answer |  |
| Explanation | Box 1: IDatabase cache = connection.GetDatabase(); Connection refers to a previously configured ConnectionMultiplexer. Box 2: cache. cache.KeyDelete ("teams",") References: <https://azure.microsoft.com/sv-se/blog/lap-around-azure-redis-cache-preview/> |

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| Question | You develop software solutions for a mobile delivery service. You are developing a mobile app that users can use to order from a restaurant in their area. The app uses the following workflow: 1. - A driver selects the restaurants for which they will deliver orders. 2. - Orders are sent to all available drivers in an area. 3. - Only orders for the selected restaurants will appear for the driver. 4. - The first driver to accept an order removes it from the list of available orders. You need to implement an Azure Service Bus solution. Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order |
| Answer |  |
| Explanation | Box 1: Create a single Service Bus Namespace To begin using Service Bus messaging entities in Azure, you must first create a namespace with a name that is unique across Azure. A namespace provides a scoping container for addressing Service Bus resources within your application. Box 2: Create a Service Bus Topic for each restaurant for which a driver can receive messages. Create topics. Box 3: Create a Service Bus subscription for each restaurant for which a driver can receive orders. Topics can have multiple, independent subscriptions. References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-messaging-overview> |

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| Question | A company runs an international travel and bookings management service. The company plans to begin offering restaurant bookings. You must develop a solution that uses Azure Search and meets the following requirements: ✑ Users must be able to search for restaurants by name, description, location, and cuisine. ✑ Users must be able to narrow the results further by location, cuisine, rating, and family-friendliness. ✑ All words in descriptions must be included in searches. You need to add annotations to the restaurant class. How should you complete the code segment? |
| Answer |  |
| Explanation | Box 1: [IsSearchable.IsFilterable.IsSortable,IsFacetable]  Location - Users must be able to search for restaurants by name, description, location, and cuisine. Users must be able to narrow the results further by location, cuisine, rating, and family-friendliness. Box 2: [IsSearchable.IsFilterable.IsSortable,Required]  Description - Users must be able to search for restaurants by name, description, location, and cuisine. All words in descriptions must be included in searches. Box 3: [IsFilterable,IsSortable,IsFaceTable]  Rating - Users must be able to narrow the results further by location, cuisine, rating, and family-friendliness. Box 4: [IsSearchable.IsFilterable,IsFacetable]  Cuisines - Users must be able to search for restaurants by name, description, location, and cuisine. Users must be able to narrow the results further by location, cuisine, rating, and family-friendliness. Box 5: [IsFilterable,IsFacetable]  FamilyFriendly - Users must be able to narrow the results further by location, cuisine, rating, and family-friendliness. References: <https://www.henkboelman.com/azure-search-the-basics/> |

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| Question | You develop a gateway solution for a public facing news API. The news API back end is implemented as a RESTful service and hosted in an Azure App Service instance. You need to configure back-end authentication for the API Management service instance. Which target and gateway credential type should you use? To answer, drag the appropriate values to the correct parameters. Each value may be used once, more than once, or not at all. |
| Answer |  |
| Explanation | Box 1: Azure Resource -  Box 2: Client cert - API Management allows to secure access to the back-end service of an API using client certificates. References: <https://docs.microsoft.com/en-us/rest/api/apimanagement/apimanagementrest/azure-api-management-rest-api-backend-entity> |

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| Question | A company is implementing a publish-subscribe (Pub/Sub) messaging component by using Azure Service Bus. You are developing the first subscription application. In the Azure portal you see that messages are being sent to the subscription for each topic. You create and initialize a subscription client object by supplying the correct details, but the subscription application is still not consuming the messages. You need to complete the source code of the subscription client What should you do? |
| Answer | * A. await subscriptionClient.CloseAsync(); * B. await subscriptionClient.AddRuleAsync(new RuleDescription(RuleDescription.DefaultRuleName, new TrueFilter())); * C. subscriptionClient.RegisterMessageHandler(ProcessMessagesAsync, messageHandlerOptions); * D. subscriptionClient = new SubscriptionClient(ServiceBusConnectionString, TopicName, SubscriptionName); |
| Explanation | Using topic client, call RegisterMessageHandler which is used to receive messages continuously from the entity. It registers a message handler and begins a new thread to receive messages. This handler is waited on every time a new message is received by the receiver. subscriptionClient.RegisterMessageHandler(ReceiveMessagesAsync, messageHandlerOptions); References: <https://www.c-sharpcorner.com/article/azure-service-bus-topic-and-subscription-pub-sub/> |

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| Question | You have an application that provides weather forecasting data to external partners. You use Azure API Management to publish APIs. You must change the behavior of the API to meet the following requirements: ✑ Support alternative input parameters. ✑ Remove formatting text from responses. ✑ Provide additional context to back-end services. Which types of policies should you implement? |
| Answer |  |
| Explanation | Inbound, Outbound, inbound |

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| Question | You are developing a .NET Core MVC application for customers to research hotels. The application will use Azure Search. The application will search the index by using various criteria to locate documents related to hotels. The index will include search fields for rate, a list of amenities, and distance to the nearest airport. The application must support the following scenarios for specifying search criteria and organizing results: ✑ Search the index by using regular expressions. Organize results by counts for name-value pairs.  ✑ List hotels within a specified distance to an airport and that fall within a specific price range. You need to configure the SearchParameters class. Which properties should you configure? |
| Answer |  |
| Explanation | Box 1: QueryType - The SearchParameters.QueryType Property gets or sets a value that specifies the syntax of the search query. The default is 'simple'. Use 'full' if your query uses the Lucene query syntax. You can write queries against Azure Search based on the rich Lucene Query Parser syntax for specialized query forms: wildcard, fuzzy search, proximity search, regular expressions are a few examples.  Box 2: Facets - The facets property gets or sets the list of facet expressions to apply to the search query. Each facet expression contains a field name, optionally followed by a comma-separated list of name:value pairs.  Box 3: Filter - The Filter property gets or sets the OData $filter expression to apply to the search query. References: https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.search.models.searchparameters https://docs.microsoft.com/en-us/azure/search/query-lucene-syntax <https://docs.microsoft.com/en-us/dotnet/api/microsoft.azure.search.models.searchparameters.querytype> |

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| Question | You develop a news and blog content delivery app for Windows devices. A notification must arrive on a user's device when there is a new article available for them to view. You need to implement push notifications. How should you complete the code segment? |
| Answer |  |
| Explanation | Box 1: NotificationHubClient -  Box 2: NotificationHubClient - Box 3: CreateClientFromConnectionString // Initialize the Notification Hub NotificationHubClient hub = NotificationHubClient.CreateClientFromConnectionString(listenConnString, hubName); Box 4: SendWindowsNativeNotificationAsync Send the push notification. var result = await hub.SendWindowsNativeNotificationAsync(windowsToastPayload); References: https://docs.microsoft.com/en-us/azure/notification-hubs/notification-hubs-push-notification-registration-management <https://github.com/MicrosoftDocs/azure-docs/blob/master/articles/app-service-mobile/app-service-mobile-windows-store-dotnet-get-started-push.md> |

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| Question | You are creating an app that uses Event Grid to connect with other services. Your app's event data will be sent to a serverless function that checks compliance. This function is maintained by your company. You write a new event subscription at the scope of your resource. The event must be invalidated after a specific period of time. You need to configure Event Grid. What should you implement? |
| Answer |  |
| Explanation | Box 1: SAS tokens - Custom topics use either Shared Access Signature (SAS) or key authentication. Microsoft recommends SAS, but key authentication provides simple programming, and is compatible with many existing webhook publishers. In this case we need the expiration time provided by SAS tokens.  Box 2: ValidationCode handshake - Event Grid supports two ways of validating the subscription: ValidationCode handshake (programmatic) and ValidationURL handshake (manual). If you control the source code for your endpoint, this method is recommended. Incorrect Answers: ValidationURL handshake (manual): In certain cases, you can't access the source code of the endpoint to implement the ValidationCode handshake. For example, if you use a third-party service (like Zapier or IFTTT), you can't programmatically respond with the validation code. References: <https://docs.microsoft.com/en-us/azure/event-grid/security-authentication> |

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| Question | You are validating the configuration of an Azure Search indexer. The service has been configured with an indexer that uses the Import Data option. The index is configured using options as shown in the Index Configuration exhibit. (Click the Index Configuration tab.)  You use an Azure table as the data source for the import operation. The table contains three records with item inventory data that matches the fields in the Storage data exhibit. These records were imported when the index was created. (Click the Storage Data tab.) When users search with no filter, all three records are displayed.  When users search for items by description, Search explorer returns no records. The Search Explorer exhibit shows the query and results for a test. In the test, a user is trying to search for all items in the table that have a description that contains the word bag. (Click the Search Explorer tab.)  You need to resolve the issue. For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | Box 1: Yes - The ItemDescription field in not searchable.  Box 2: No - The ItemDescription field in not searchable, but we would need to recreate the index.  Box 3: Yes - An indexer in Azure Search is a crawler that extracts searchable data and metadata from an external Azure data source and populates an index based on field-to- field mappings between the index and your data source. This approach is sometimes referred to as a 'pull model' because the service pulls data in without you having to write any code that adds data to an index.  Box 4: No - References: https://docs.microsoft.com/en-us/azure/search/search-what-is-an-index <https://docs.microsoft.com/en-us/azure/search/search-indexer-overview> |

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| Question | You are developing an Azure App Service hosted ASP.NET Core API app by using C#. The API app will allow users to authenticate by using Twitter and Azure Active Directory (Azure AD). Users must be authenticated before calling API methods. You must log the user's name for each method call. You need to configure the API method calls. Which values should you use? |
| Answer |  |
| Explanation | Box 1: Authorize - Box 2: X-MS-CLIENT-PRINCIPAL-NAME App Service passes user claims to your application by using special headers. External requests aren't allowed to set these headers, so they are present only if set by App Service. Some example headers include:  X-MS-CLIENT-PRINCIPAL-NAME -  X-MS-CLIENT-PRINCIPAL-ID - Here's the set of headers you get from Easy Auth for a Twitter authenticated user: { "cookie": "AppServiceAuthSession=Lx43...xHDTA==", ... "x-ms-client-principal-name": "evilSnobu", "x-ms-client-principal-id": "35....", "x-ms-client-principal-idp": "twitter", "x-ms-token-twitter-access-token": "35...Dj", "x-ms-token-twitter-access-token-secret": "OK3...Jx", } References: <https://docs.microsoft.com/en-us/azure/app-service/app-service-authentication-how-to> |

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| Question | You are preparing to deploy an ASP.NET Core website to an Azure Web App from a GitHub repository. The website includes static content generated by a script. You plan to use the Azure Web App continuous deployment feature. You need to run the static generation script before the website starts serving traffic. What are two possible ways to achieve this goal? |
| Answer | * A. Create a file named .deployment in the root of the repository that calls a script which generates the static content and deploys the website. * B. Add a PreBuild target in the websites csproj project file that runs the static content generation script. * C. Create a file named run.cmd in the folder /run that calls a script which generates the static content and deploys the website. * D. Add the path to the static content generation tool to WEBSITE\_RUN\_FROM\_PACKAGE setting in the host.json file. |
| Explanation | A: To customize your deployment, include a .deployment file in the repository root. You just need to add a file to the root of your repository with the name .deployment and the content: [config] command = YOUR COMMAND TO RUN FOR DEPLOYMENT this command can be just running a script (batch file) that has all that is required for your deployment, like copying files from the repository to the web root directory for example. D: In Azure, you can run your functions directly from a deployment package file in your function app. The other option is to deploy your files in the d:\home\site \wwwroot directory of your function app (see A above). To enable your function app to run from a package, you just add a WEBSITE\_RUN\_FROM\_PACKAGE setting to your function app settings. Note: The host.json metadata file contains global configuration options that affect all functions for a function app. References: https://github.com/projectkudu/kudu/wiki/Custom-Deployment-Script <https://docs.microsoft.com/bs-latn-ba/azure/azure-functions/run-functions-from-deployment-package> |

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| Question | You are developing a solution for a company that hosts a large collection of videos in Azure. Videos with celebrity speakers must be prioritized and featured on an Azure website. The videos must support closed captioning. You need to select the Azure service that fits the requirements. Which service should you use? |
| Answer | * A. Speaker Identification * B. Text Analytics * C. Content Moderator * D. Video Indexer |
| Explanation | Azure Video Indexer is a cloud application built on Azure Media Analytics, Azure Search, Cognitive Services (such as the Face API, Microsoft Translator, the Computer Vision API, and Custom Speech Service). It enables you to extract the insights from your videos using Video Indexer models described below: ✑ Closed captioning: Creates closed captioning in three formats: VTT, TTML, SRT. ✑ Celebrity identification: Video Indexer automatically identifies over 1 million celebrities "" such as world leaders, actors and actresses, athletes, researchers, business and tech leaders across the globe. The data about these celebrities can also be found on various famous websites, for example, IMDB and Wikipedia. References: <https://docs.microsoft.com/en-us/azure/media-services/video-indexer/video-indexer-overview> |

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| Question | Which WebJob type should you recommend? To answer, drag the appropriate WebJob types to the correct scenarios. Each WebJob type may be used once, more than once, or not at all. |
| Answer |  |
| Explanation | Box 1: Continuous - Continuous runs on all instances that the web app runs on. You can optionally restrict the WebJob to a single instance.  Box 2: Triggered - Triggered runs on a single instance that Azure selects for load balancing.  Box 3: Continuous - Continuous supports remote debugging. Note: The following table describes the differences between continuous and triggered WebJobs.  References: <https://docs.microsoft.com/en-us/azure/app-service/web-sites-create-web-jobs> |

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| Question | You need to change definitions, add new logic, and optimize these apps on a regular basis. What should you use? |
| Answer |  |
| Explanation | Box 1: Enterprise Integration Pack After you create an integration account that has partners and agreements, you are ready to create a business to business (B2B) workflow for your logic app with the Enterprise Integration Pack.  Box 2: Code View Editor - To work with logic app definitions in JSON, open the Code View editor when working in the Azure portal or in Visual Studio, or copy the definition into any editor that you want.  Box 3: Logical Apps Designer - You can build your logic apps visually with the Logic Apps Designer, which is available in the Azure portal through your browser and in Visual Studio. References: https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-enterprise-integration-b2b https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-author-definitions <https://docs.microsoft.com/en-us/azure/logic-apps/logic-apps-overview> |

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| Question | You are developing a solution for a hospital to support the following use cases: ✑ The most recent patient status details must be retrieved even if multiple users in different locations have updates the patient record. ✑ Patient health monitoring data retrieved must be the current version or the prior version. ✑ After a patient is discharged and all charges have been assessed, the patient billing record contains the final charges. You provision a Cosmos DB NoSQL database and set the default consistency level for the database account to Strong. You set the value for Indexing Mode to Consistent. You must minimize latency and any impact to the availability of the solution. You must override the default consistency level at the query level to meet the required consistency guarantees for the scenarios. You need to configure the consistency levels to support each scenario. Which consistency levels should you implement? To answer, drag the appropriate consistency levels to the correct requirements. Each consistency level may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Box 1: Strong - Strong: Strong consistency offers a linearizability guarantee. The reads are guaranteed to return the most recent committed version of an item. A client never sees an uncommitted or partial write. Users are always guaranteed to read the latest committed write.  Box 2: Bounded staleness - Bounded staleness: The reads are guaranteed to honor the consistent-prefix guarantee. The reads might lag behind writes by at most "K" versions (that is "updates") of an item or by "t" time interval. When you choose bounded staleness, the "staleness" can be configured in two ways: The number of versions (K) of the item The time interval (t) by which the reads might lag behind the writes  Box 3: Eventual - Eventual: There's no ordering guarantee for reads. In the absence of any further writes, the replicas eventually converge. Incorrect: Consistent prefix: Updates that are returned contain some prefix of all the updates, with no gaps. Consistent prefix guarantees that reads never see out-of-order writes. References: https://docs.microsoft.com/en-us/azure/cosmos-db/consistency-levels |

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| Question | You develop a solution for an entertainment company. The company has built an app that uses an Azure SQL database. You need to implement caching to improve the performance of all database queries by caching frequently accessed data while minimizing cost. The cache must be highly available and replicated for failover. What should you create? |
| Answer | * A. Azure Redis Cache Database using a Premium Tier configuration. Use Redis Clusters to shard data across multiple nodes. * B. Azure Redis Cache Database using a Basic Tier configuration. * C. Azure Redis Cache Database using a Standard Tier configuration. * D. Azure Redis Cache Database using a Premium Tier configuration. Use Redis Clusters to back up data. |
| Explanation | The Standard Tier provides a replicated cache in a two-node primary/secondary configuration. Microsoft manages automatic replication between the two nodes, and offer a high-availability SLA. Incorrect Answers: A: Premium with shard data is a good solution, but it would not minimize cost. B: Basic tier does not support cache replication. D: Redis clusters are used to shard data, not to backup data. References: https://azure.microsoft.com/en-us/pricing/details/cache/ |

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| Question | A company provides financial services. Core business solutions store data in an on-premises Microsoft SQL Server database. The solutions generate terabytes of data each year. The company stores data for at least seven years. Each year, the company has on average one instance where historical transaction data is needed. You must migrate storage for the solution to the cloud. Data must be stored in an encrypted format and usable within 24 hours. You need to select a storage technology for the solution that minimizes costs. What should you implement? To answer, drag the appropriate technologies to the correct workloads. Each technology may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer |  |
| Explanation | Box 1: Azure Blob store - Azure storage offers different storage tiers which allow you to store Blob object data in the most cost-effective manner. The available tiers include: ✑ Premium storage (preview) provides high performance hardware for data that is accessed frequently. ✑ Hot storage: is optimized for storing data that is accessed frequently. ✑ Cool storage is optimized for storing data that is infrequently accessed and stored for at least 30 days. ✑ Archive storage  Box 2: Archive - Archive storage is optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements (on the order of hours). References: https://docs.microsoft.com/en-in/azure/storage/blobs/storage-blob-storage-tiers |

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| Question | A company provides web app hosting services for customers. You have a set of App Service Plans available to deploy resources for new projects. The available service tiers are shown in the Service Tiers exhibit. (Click the Service Tiers tab.)  You must provision resources for the projects as shown in the Projects exhibit. (Click the Projects tab.)  The AdventureWorks project requires the use of deployment slots as shown in the Deployment Slots exhibit. (Click the Deployment Slots tab.)  You need to determine where to deploy resources for each project. For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Box 1: No - AdventureWorks Cycles should use the dedicated service plan. The Dedicated service tier consists of S1 Standard instance, and the P1 premium instance. Note: When you deploy your web app, web app on Linux, mobile back end, and API app to App Service, you can deploy to a separate deployment slot instead of the default production slot when running in the Standard, Premium, or Isolated App Service plan tier.  Box 2: Yes - The prototype plan can be used for Research. The Prototype Service consists F1 (free) instance, and D1 (shared instance)  Box 3: No - Coho Vineyeard can be hosted on the Shared service tier. The Shared service tier consists of the B1 and B2 basic instances. References: https://azure.microsoft.com/en-us/pricing/details/app-service/windows/ |

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| Question | Each year, a company consolidates manufacturing data for a year and stores the data in a single blob within a Blob container. Data from previous years is stored in the same storage account in the same container. The company has a General Purpose v2 (GPv2) Azure Storage account with a Blob container named Compliance-data. Data from previous years is retained for compliance reasons but it is infrequently accesses. The current solution is becoming costly. You observe that users accidentally modify compliance data. You need to reduce costs and preserve the compliance data. What should you do? |
| Answer | * A. In the Azure Portal, go to configuration settings of each blob in the Compliance-data container and set Access tier to Archive. * B. Set up another GPv2 storage account and copy data to the new storage account. * C. In the Azure Portal, go to configuration settings for each blob in the Compliance-data container and set the Access tier to Cool. * D. Configure another GPv2 cold storage account and copy data to the new storage account. |
| Explanation | Cool storage is optimized for storing data that is infrequently accessed and stored for at least 30 days. Incorrect Answers: A: Archive storage is optimized for storing data that is rarely accessed and stored for at least 180 days with flexible latency requirements (on the order of hours). References: <https://docs.microsoft.com/en-in/azure/storage/blobs/storage-blob-storage-tiers> |

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| Question | A company is implementing a product that runs on Linux. They want to run the product in production in their on-premises datacenter and Azure. The product must use the same technologies in Azure and on-premises with the most reliable and lowest latency connection. You need to select the appropriate technologies. |
| Answer |  |
| Explanation | Box 1: Virtual machine scale sets A virtual machine scale set allows you to deploy and manage a set of identical, auto-scaling virtual machines. You can scale the number of VMs in the scale set manually, or define rules to autoscale based on resource usage like CPU, memory demand, or network traffic. An Azure load balancer then distributes traffic to the VM instances in the scale set. You can deploy a scale set with a Windows Server image or Linux image such as RHEL, CentOS, Ubuntu, or SLES.  Box 2: ExpressRoute - ExpressRoute is an Azure service that lets you create private connections between Microsoft datacenters and infrastructure that's on your premises or in a colocation facility. ExpressRoute connections do not go over the public Internet, and offer higher security, reliability, and speeds with lower latencies than typical connections over the Internet. Incorrect Answers: Not Web Apps: Web App is a fully managed compute platform that is optimized for hosting websites and web applications. Customers can use App Service on Linux to host web apps natively on Linux for supported application stacks. References: https://docs.microsoft.com/en-us/azure/expressroute/expressroute-introduction <https://docs.microsoft.com/en-us/azure/virtual-machine-scale-sets/quick-create-portal> |

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| Question | You develop an application named App1 that needs to communicate with an existing app named MainApp. App1 is disconnected from other systems and uses different communication protocols than MainApp. You must ensure that App1 is available in every Azure region and can be scaled out. App1 must be able to connect to MainApp across private and public cloud environments and process requests in the order they are received. Which integration solution should you implement? |
| Answer | * A. Azure Storage Queue * B. Event Grid * C. Azure Relay * D. Azure Service Bus |
| Explanation | <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-azure-and-service-bus-queues-compared-contrasted> |

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| Question | A company has the following offices:  The company plans to expand its network to the cloud. You identify the following requirements: Location1 requires a dynamic pool of virtual machines (VMs) for offsite computations. Employees from Location1 must be able to connect to VMs through a virtual network to start tasks and check results. Servers from Location2 must privately and continuously back up all data to Azure. The process will require up to 1 Gbps bandwidth. You need to configure the hybrid solution. Which connection types should you use? |
| Answer |  |
| Explanation | Box 1: Point-to-Site VPN - Box 2: Exchange Service Provider If your organization has a single location then the EXP (Exchange Service Provider) path gives you that point-to-point and most flexibility in terms of the routing. If your organization has many different locations then the NSP (Network Service Provider) may be a better fit since it is multipoint based however if you already have connectivity for all locations then EXP may still be preferred because of the additional configurability over the routing and additional equipment possibilities. References: <https://www.itprotoday.com/mobile-management-and-security/q-what-are-differences-between-network-services-provider-nsp-and> |

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| Question | You must implement Application Insights instrumentation capabilities utilizing the Azure Mobile Apps SDK to provide meaningful analysis of user interactions with a mobile app. You need to capture the data required to implement the Usage Analytics feature of Application Insights. What data should you capture? |
| Answer | * A. Events * B. Trace * C. Exception * D. Session Id * E. User Id |
| Explanation | After your app is onboarded to App Center, it needs to be modified to send custom event telemetry using the App Center SDK. Custom events are the only type of App Center telemetry that is exported to Application Insights. References: <https://docs.microsoft.com/en-us/azure/application-insights/app-insights-mobile-center-quickstart> |

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| Question | You develop an app that allows users to upload photos and videos to Azure storage. The app uses a storage REST API call to upload the media to a blob storage account named Account1. You have blob storage containers named Container1 and Container2. Uploading of videos occurs on an irregular basis. You need to copy specific blobs from Container1 to Container2 in real time when specific requirements are met, excluding backup blob copies. What should you do? |
| Answer | * A. Run the Azure PowerShell command Start-AzureStorageBlobCopy. * B. Use AzCopy with the Snapshot switch to copy blobs to Container2. * C. Copy Blobs to Container2 by using the Put Blob operation of the Blob Service REST API. * D. Download the blob to a virtual machine and then upload the blob to Container2 |
| Explanation | The Start-AzureStorageBlobCopy cmdlet starts to copy a blob.  Example 1: Copy a named blob - C:\PS>Start-AzureStorageBlobCopy -SrcBlob "ContosoPlanning2015" -DestContainer "ContosoArchives" -SrcContainer "ContosoUploads" This command starts the copy operation of the blob named ContosoPlanning2015 from the container named ContosoUploads to the container named ContosoArchives. References: <https://docs.microsoft.com/en-us/powershell/module/azure.storage/start-azurestorageblobcopy?view=azurermps-6.13.0> |

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| Question | You are developing a data storage solution for a social networking app. The solution requires a mobile app that stores user information using Azure Table Storage. You need to develop code that can insert multiple sets of user information. How should you complete the code? |
| Answer |  |
| Explanation | Box 1, Box 2: TableBatchOperation Create the batch operation. TableBatchOperation op = new TableBatchOperation();  Box 3: ExecuteBatch - / Execute the batch operation. table.ExecuteBatch(op); Note: You can insert a batch of entities into a table in one write operation. Some other notes on batch operations: You can perform updates, deletes, and inserts in the same single batch operation. A single batch operation can include up to 100 entities. All entities in a single batch operation must have the same partition key. While it is possible to perform a query as a batch operation, it must be the only operation in the batch. References: <https://docs.microsoft.com/en-us/azure/cosmos-db/table-storage-how-to-use-dotnet> |

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| Question | Your company has several websites that use a company logo image. You use Azure Content Delivery Network (CDN) to store the static image. You need to determine the correct process of how the CDN and the Point of Presence (POP) server will distribute the image and list the items in the correct order. In which order do the actions occur? |
| Answer |  |
| Explanation | Step 1: A user requests the image.. A user requests a file (also called an asset) by using a URL with a special domain name, such as <endpoint name>.azureedge.net. This name can be an endpoint hostname or a custom domain. The DNS routes the request to the best performing POP location, which is usually the POP that is geographically closest to the user. Step 2: If no edge servers in the POP have the.. If no edge servers in the POP have the file in their cache, the POP requests the file from the origin server. The origin server can be an Azure Web App, Azure Cloud Service, Azure Storage account, or any publicly accessible web server. Step 3: The origin server returns the.. The origin server returns the file to an edge server in the POP. An edge server in the POP caches the file and returns the file to the original requestor (Alice). The file remains cached on the edge server in the POP until the time-to-live (TTL) specified by its HTTP headers expires. If the origin server didn't specify a TTL, the default TTL is seven days. Step 4: Subsequent requests for.. Additional users can then request the same file by using the same URL that the original user used, and can also be directed to the same POP. If the TTL for the file hasn't expired, the POP edge server returns the file directly from the cache. This process results in a faster, more responsive user experience. References: <https://docs.microsoft.com/en-us/azure/cdn/cdn-overview> |

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| Question | You are developing an app that manages users for a video game. You plan to store the region, email address, and phone number for the player. Some players may not have a phone number. The player's region will be used to load-balance data. Data for the app must be stored in Azure Table Storage. You need to develop code to retrieve data for an individual player. How should you complete the code? |
| Answer |  |
| Explanation | Box 1: region - The player's region will be used to load-balance data. Choosing the PartitionKey. The core of any table's design is based on its scalability, the queries used to access it, and storage operation requirements. The PartitionKey values you choose will dictate how a table will be partitioned and the type of queries that can be used. Storage operations, in particular inserts, can also affect your choice of PartitionKey values.  Box 2: email - Not phone number some players may not have a phone number.  Box 3: CloudTable - Box 4 : TableOperation query =..  Box 5: TableResult - References: <https://docs.microsoft.com/en-us/rest/api/storageservices/designing-a-scalable-partitioning-strategy-for-azure-table-storage> |

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| Question | You are working for a company that designs mobile applications. They maintain a server where player records are assigned to their different games. The tracking system is new and in development. The application uses Entity Framework to connect to an Azure Database. The database holds a Player table and Game table. When adding a player, the code should insert a new player record, and add a relationship between an existing game record and the new player record. The application will call CreatePlayerWithGame with the correct gameId and the playerId to start the process. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. NOTE: Each correct selection is worth one point. |
| Answer |  |
| Explanation | Many-to-many relationships without an entity class to represent the join table are not yet supported. However, you can represent a many-to-many relationship by including an entity class for the join table and mapping two separate one-to-many relationships. protected override void OnModelCreating(ModelBuilder modelBuilder) { modelBuilder.Entity<PostTag>() .HasKey(t => new { t.PostId, t.TagId }); modelBuilder.Entity<PostTag>() .HasOne(pt => pt.Post) .WithMany(p => p.PostTags) .HasForeignKey(pt => pt.PostId); modelBuilder.Entity<PostTag>() .HasOne(pt => pt.Tag) .WithMany(t => t.PostTags) .HasForeignKey(pt => pt.TagId); } } |

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| Question | You have an Azure subscription. You must create a file share with a quota of 2,048 GB. You create the following variables.  In which order should you arrange the Azure CLI commands to develop the solution? To answer, move all the commands from the list of commands to the answer area and arrange them in the correct order. |
| Answer | Check1 |
| Explanation | Step 1: az group create - The resource group will be used when you create the storage account in step 2. Step 2: Az storage account create To use Azure Storage, you need a storage account. You can create a new Azure Storage account after you've configured your computer to connect to your subscription. az storage account create \ --location <location> \ --name <account\_name> \ --resource-group <resource\_group> \ --sku <account\_sku>  Step 3: az storage account keys - Set default Azure storage account environment variables You can have multiple storage accounts in your Azure subscription. To select one of them to use for all subsequent storage commands, you can set these environment variables: First, display your storage account keys by using the az storage account keys list command  Step 4: Az storage share create - References: <https://docs.microsoft.com/en-us/azure/storage/common/storage-azure-cli> |

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| Question | You need to upload a video URL to Azure Video Indexer and return the video id. Which three code segments should you use to complete the solution? To answer, move the appropriate code segments from the code segments to the answer area and arrange them in the correct order. |
| Answer | Check1 |
| Explanation | Step 1: var uploadRequestResult = client.PostAsync($"{apiUrl}/{location}/Accounts/{accountId}/Videos?accessToken={accountAccessToken} &name=some\_name&description=some\_description&privacy=private&partition=some\_partition&videoUrl={videoUrl}", content).Result; Step 2: var uploadResult = uploadRequestResult.Content.ReadAsStringAsync().Result; Step 3: var videoId = JsonConvert.DeserializeObject<dynamic>(uploadResult)["id"]; Get the video id from the upload result. References: https://docs.microsoft.com/en-us/azure/media-services/video-indexer/video-indexer-use-apis |

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| Question | You maintain an Azure Web App that runs in a container. The container is using a Dockerfile that is copied to numerous places and consumes a large amount of storage. You need to optimize the Dockerfile. What should you do? |
| Answer | * A. Minimize layers by grouping actions in as few RUN instructions as possible. * B. Use multiple RUN instructions for cached operation. * C. Minimize layers by concatenating all RUN instructions on one line. * D. Configure the CLI with a .dockerignore file. |
| Explanation | Minimize the number of layers. Prior to Docker 17.05, and even more, prior to Docker 1.10, it was important to minimize the number of layers in your image.C In Docker 1.10 and higher, only RUN, COPY, and ADD instructions create layers. References: <https://docs.docker.com/v17.09/engine/userguide/eng-image/dockerfile_best-practices> |

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| Question | You are developing an Azure Batch solution to perform CPU intensive calculations. The calculations occur at a specific time each week and last for approximately one hour. Before any changes are made, a timer must be created to measure the initial duration. The timer must start before the first calculation is queued to run on the compute node. You need to implement the timer. Before which line should the timer be created? |
| Answer | * A. CloudJob job = batchClient.JobOperations.CreateJob(); * B. using (BatchClient batchClient = BatchClient.Open(cred)) * C. batchClient.JobOperations.AddTask(JobId, tasks); * D. batchClient.Utilities.CreateTaskStateMonitor().WaitAll(addedTasks, TaskState.Completed, timeout); |
| Explanation | <https://docs.microsoft.com/en-us/azure/batch/quick-run-dotnet> |

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| Question | You are developing a reliable stateless service by using Azure Service Fabric. The service will run in a five-node cluster in Azure. You configure auto-scale rules to scale out the cluster during peak periods. The service must run on every valid node within the Azure Service Fabric cluster. You need to update the service. What should you do? |
| Answer | * A. Set the value of the InstanceCount property to -1. * B. Create and implement a reliable collection. * C. Set the value of the UseImplicitHost property to true. * D. Set the value of the InstanceCount property to 5. |
| Explanation | Maximum Instance Count defines the upper limit for scaling. If number of instances of the partition reaches this limit, then the service will not be scaled out, regardless of the load. It is possible to omit this limit by specifying value of -1, and in that case the service will be scaled out as much as possible (the limit is the number of nodes that are available in the cluster). References: <https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-cluster-resource-manager-autoscaling> |

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| Question | You are reviewing the following code for an Azure Function. The code is called each time an item is added to a queue. The queue item is a JSON string that deserializes into a class named WorkItem. (Line numbers are included for reference only.)  For each of the following statements, select Yes if the statement is true. Otherwise, select No. |
| Answer |  |
| Explanation | NA |

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| Question | You are developing a rating service for books that runs on Azure Service Fabric. One of the services uses reliable collections that update the ratings of a book. Testers report that the ratings are not updates when the code is run. You need to implement the code to ensure that ratings are updates in the collection. You have the following class:  How should you complete the code? To answer, drag the appropriate code segments to the correct locations. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content. |
| Answer | Check1 |
| Explanation | Box 1: Book updatedBook = new Book(currentBook); Create new user object with the same state as the current user object. NOTE: This must be a deep copy; not a shallow copy. Specifically, only immutable state can be shared by currentUser & updatedUser object graphs. Box 2: updatedBook.Rating = updatedBook.Rating+1; Await m\_dic.SetValue(tc, name, updatedBook); In the new object, modify any properties you desire. Update the key's value to the updatedBook info References: <https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-work-with-reliable-collections> |

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| Question | You have an Azure App Services Web app, Azure SQL Database instance, Azure Storage Account, and an Azure Redis Cache instance in a resource group. A developer must be able to publish code to the web app. You must grant the developer the Contribute role to the web app. You need to grant the role. Which two commands can you use? Each correct answer presents a complete solution. NOTE: Each correct selection is worth one point. |
| Answer | * A. az role assignment create * B. New-AzureRmRoleAssignment * C. New-AzureRmRoleDefinition * D. az role definition create |
| Explanation | A: The az role assignment create command creates a new role assignment for a user, group, or service principal. Example: Create role assignment for an assignee. az role assignment create --assignee sp\_name --role a\_role B: The New-AzureRmRoleAssignment command assigns the specified RBAC role to the specified principal, at the specified scope. Incorrect Answers: C, D: Creates a custom role in Azure RBAC. References: https://docs.microsoft.com/en-us/cli/azure/role/assignment?view=azure-cli-latest#az-role-assignment-create https://docs.microsoft.com/en-us/powershell/module/azurerm.resources/new-azurermroleassignment?view=azurermps-6.13.0 |

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| Question | You are implementing authentication for applications in your company. You plan to implement self-service password reset (SSPR) and multifactor authentication (MFA) in Azure Active Directory (Azure AD). You need to select authentication mechanisms that can be used for both MFA and SSPR. |
| Answer | * A. App passwords * B. Short Message Service (SMS) messages * C. Email addresses * D. Azure AD passwords * E. Security questions |
| Explanation |  |

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| Question | CompanyA has multiple on-premises Active Directory forests. CompanyA purchases CompanyB. CompanyB has multiple on-premises Active Directory forests. CompanyB does not have Foreign Security Principals (FSPs). You need to connect the Active Directory environments without the use of a staging server and causing minimal disruption to current authentication. Which Azure AD Connect topology should you use? |
| Answer | * A. multiple forests, match users * B. multiple forests, multiple sync servers to one Azure AD tenant * C. multiple forests, single sync server, single Azure AD tenant * D. single forest, single Azure AD tenant |
| Explanation | Multiple forests, single sync server, users are represented in only one directory In this environment, all on-premises forests are treated as separate entities. No user is present in any other forest. Each forest has its own Exchange organization, and there's no GALSync between the forests. This topology might be the situation after a merger/acquisition or in an organization where each business unit operates independently. These forests are in the same organization in Azure AD and appear with a unified GAL. In the preceding picture, each object in every forest is represented once in the metaverse and aggregated in the target Azure AD tenant. Incorrect Answers: A: Match users uses Foreign Security Principals. B: Having more than one Azure AD Connect sync server connected to a single Azure AD tenant is not supported. References: <https://docs.microsoft.com/en-us/azure/active-directory/hybrid/plan-connect-topologies> |

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| Question | You have developed a Web API as a RESTful service using the OpenAPI specification. The API is going to be placed as the backend service for an existing Azure API Management service. You have to execute the right command to ensure the API is accessible via the Azure API Management service.  Which of the following command would you execute for this requirement? |
| Answer |  |
| Explanation |  |

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| Question | You are developing an ASP.Net core application that will interact with Azure Blob storage containers. The users would use Azure AD credentials to log into the web site. Role-based access control would be used to control access on the containers that stores the user’s data. You have to configure the Azure AD application for the web site so that the user’s permission can be used to interact with the Azure Blob containers.  Which of the following would you set as the Permission for the Azure Storage API? |
| Answer |  |
| Explanation |  |

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| Question | You are developing an ASP.Net core application that will interact with Azure Blob storage containers. The users would use Azure AD credentials to log into the web site. Role-based access control would be used to control access on the containers that stores the user’s data. You have to configure the Azure AD application for the web site so that the user’s permission can be used to interact with the Azure Blob containers.  Which of the following would you set as the Permission Type for the Azure Storage API? |
| Answer |  |
| Explanation |  |

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| Question | You are developing an ASP.Net core application that will interact with Azure Blob storage containers. The users would use Azure AD credentials to log into the web site. Role-based access control would be used to control access on the containers that stores the user’s data. You have to configure the Azure AD application for the web site so that the user’s permission can be used to interact with the Azure Blob containers.  Which of the following would you set as the Permission for the Microsoft Graph API? |
| Answer |  |
| Explanation |  |

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| Question | You are developing an ASP.Net core application that will interact with Azure Blob storage containers. The users would use Azure AD credentials to log into the web site. Role-based access control would be used to control access on the containers that stores the user’s data. You have to configure the Azure AD application for the web site so that the user’s permission can be used to interact with the Azure Blob containers.  Which of the following would you set as the Permission Type for the Microsoft Graph API? |
| Answer |  |
| Explanation |  |

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| Question | Your company is devising a solution that will be used to receive and store messages. The stored messages will be processed accordingly. You go ahead and create an Azure Service Bus instance by providing a name, pricing tier, subscription, resource group and location.  You now have to complete the configuration for the solution. The script variables have already been set  Which of the following command would you implement for this requirement? |
| Answer |  |
| Explanation |  |

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| Question | You have an Azure storage account in place for storing blob data. The Azure storage account has the option of “soft delete” enabled. A blob named “Sample.txt” currently exists in a container in the storage account. The following operations are then performed on the blob  1) The blob is updated  2) A snapshot is created (Snapshot1)  3) A snapshot is created (Snapshot2)  4) Snapshot1 is deleted  You then go ahead and delete the blob and all snapshots.  Would be you be able to restore the blob? |
| Answer |  |
| Explanation |  |

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| Question | You have an Azure storage account in place for storing blob data. The Azure storage account has the option of “soft delete” enabled. A blob named “Sample.txt” currently exists in a container in the storage account. The following operations are then performed on the blob  1) The blob is updated  2) A snapshot is created (Snapshot1)  3) A snapshot is created (Snapshot2)  4) Snapshot1 is deleted  You then go ahead and delete the blob and all snapshots.  Would be you be able to restore Snapshot1? |
| Answer |  |
| Explanation |  |

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| Question | You’ve created an Azure Function that reads messages from Azure Queue storage and stores the messages in an Azure SQL database. During function execution runs, you can see the following error message  **Timeout expired. The timeout period elapsed prior to obtaining a connection from the pool. This may have occurred because all pooled connections were in use and max pool size was reached.**  Which of the following can be implemented to resolve this issue? |
| Answer |  |
| Explanation |  |

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| Question | You currently have a storage account in place. You are developing a program which has a module which would be used to set the metadata for blobs in the storage account. Which of the following commands would you execute for setting the metadata values? Choose 3 answers from the options given below |
| Answer |  |
| Explanation |  |

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| Question | You have to develop a new application. You have to register the application with an Azure Active Directory tenant. Which of the following are steps you would implement for this requirement? Select 3 answers from the options given below |
| Answer |  |
| Explanation |  |

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