You can use an AMI in N.Virginia Region us-east-1 to launch an EC2 instance in any AWS Region.??

AMIs are built for a specific AWS Region, they're unique for each AWS Region. You can't launch an EC2 instance using an AMI in another AWS Region, but you can copy the AMI to the target AWS Region and then use it to create your EC2 instances.

You are running a high-performance database that requires an IOPS of 310,000 for its underlying storage. What do you recommend?- Instance store, Only instane store provide IOPS in millions.

When using an Application Load Balancer to distribute traffic to your EC2 instances, the IP address you'll receive requests from will be the ALB's private IP addresses. To get the client's IP address, ALB adds an additional header called "X-Forwarded-For" contains the client's IP address.

Make sure you remember the Default Termination Policy for Auto Scaling Group. It tries to balance across AZs first, then terminates based on the age of the Launch Configuration.

Which feature in both Application Load Balancers and Network Load Balancers allows you to load multiple SSL certificates on one listener?- Server Name Indication (SNI)  
Server Name Indication (SNI) allows you to expose multiple HTTPS applications each with its own SSL certificate on the same listener.

There's no CloudWatch Metric for "requests per minute" for backend-to-database connections. You need to create a CloudWatch Custom Metric, then create a CloudWatch Alarm.

Which RDS **(NOT Aurora)** feature when used does not require you to change the SQL connection string?

*  Read Replicas add new endpoints with their own DNS name. We need to change our application to reference them individually to balance the read load.
* Multi-AZ keeps the same connection string regardless of which database is up.

SQS Delay Queues is a period of time during which Amazon SQS keeps new SQS messages invisible to consumers. In SQS Delay Queues, a message is hidden when it is first added to the queue. (default: 0 mins, max.: 15 mins)

SQS Visibility Timeout is a period of time during which Amazon SQS prevents other consumers from receiving and processing the message again. In Visibility Timeout, a message is hidden only after it is consumed from the queue. Increasing the Visibility Timeout gives more time to the consumer to process the message and prevent duplicate reading of the message. (default: 30 sec., min.: 0 sec., max.: 12 hours)

Amazon SNS can publish messages to the following endpoints HTTP(S), SQS, Lambda, mobile push, emails, or SMS.

DynamoDB Accelerator (DAX) is a fully managed, highly available, in-memory cache for DynamoDB that delivers up to 10x performance improvement. It caches the most frequently used data, thus offloading the heavy reads on hot keys off your DynamoDB table, hence preventing the "ProvisionedThroughputExceededException" exception.

An Edge-Optimized API Gateway is best for geographically distributed clients. API requests are routed to the nearest CloudFront Edge Location which improves latency. The API Gateway still lives in one AWS Region.

Amazon Cognito User Pools integrate with Facebook to provide authenticated logins for your application users.

Dynamo db Global Tables : DynamoDB Streams enable DynamoDB to get a changelog and use that changelog to replicate data across replica tables in other AWS Regions.

Overview of Key Based Authentication

in new console for key pair aws asks which type of key pair to download ppk or pem, in older version only pem was available

Basics of Firewalls

* security groups are virtual firewalls
* command to check port associated with diff software : netstat -ntlp
* ssh port should not be allowed from internet but for specific ids only
* Also to connect to instance via browser you will have to allow for all ports that is 0.0.0.0

Budget Types: (RUSC)

Cost Budget : when a cost threshold is crossed like 1$  
Usage budget:  based on expected usage %, like 300 hrs  
Savings Plan Budget: associated with the savings plans  
Reservation budget: associated with reserved services

**Building Scalable Applications**

SQS - Practical

when message is recieved by consumer in SQS queue, it is not automatically deleted from the queue. It resides there unless customer deletes it, or its retention periods end.