EC2

It allows us to launch VM. When we launch VM we call it instance.

EC2 is highly configurable where we can choose AMI that affects options such as:

The amount of CPUs
The amount of Memory (RAM)
The amount of Network Bandwidth
The OS
Attach multiple virtual hard drives for storage eg Elastic Block Store (EBS)

An Amazon Machine Image (AMI) is a predefined configuration for a virtual machine.

Different services

Virtual Machines
Amazon LightSail is the managed virtual serve service. It is the friendly version of EC2.

Containers-Virtualizing os to run multiple workloads on single os instance. Containers are generally used in micro-service architecture(when you divide you application into smaller application that talk to each other)

Elastic container Service (ECS): is a container orchestration service that support Docker containers. Launches a cluster of serves on EC2 instance with docker install.

Elastic container Registry (ERC): is repo for container image

ECS Fargate is serverless orchestration container service. It is same as ECS expect you pay-on demand per running container

(With ECS you have to keep EC2 server running even if you have no containers running) AWS manages the underlying server so you don't have to scale or upgrade the EC2 server.

Elastic Kubernets Services (EKS) is a fully managed kibernets service.

Serverless- When the underlying servers are managed by AWS.

AWS Lambda- is a severless functions service

High Performance Computing Services

A Nitro System- A combination of dedicated hardware and lightweight hypervisor enabling faster innovation and enhanced security. All new EC2 instances types using the Nitro System.

Bare Metal Instances- You can launch EC2 instance that have no hypervisor so you can run workloads directly on the hardware for maximum performance and control.
BottleRocket is Linux based open source operation system that is purpose-built by AWS for running containers on VM or bare metals

What is High Performance Computing (HPC)
A cluster of hundreds of thousands of servers with fast connection between each of them with the purpose of boosting computing capacity. When you need a supercomputer to perform computational problems too large to run on a standard computers or would take would take to long.

AWS ParallelCluster is and AWS-supported open source cluster management tooll that makes ti easy for you to deploy and mange HPC cluster on AWS