

1) Which parts of today's activity were IaaS, PaaS or SaaS? Justify your answer.

IaaS — Infrastructure as a Service

- Created or managed virtual machines (e.g., Azure VMs, AWS EC2).
- Configured storage, networking, or firewalls at the infrastructure level.
- Installed or managed operating systems yourself.
- Deployed tools that required you to manage the runtime environment.

IaaS provides virtualized servers, storage, and networking that you manage yourself.

PaaS — Platform as a Service

- Deployed an application without managing the OS or runtime.
- Used a managed platform like Azure App Service, Google App Engine, Heroku, or AWS Elastic Beanstalk.
- Focused only on your code and data, while the provider handled scaling, runtime, and patching.

PaaS gives you a managed environment where you only handle your code; the provider manages the runtime and infrastructure.

SaaS — Software as a Service

- Used a ready-made application delivered over the internet (e.g., Gmail, Zoom, Salesforce, Office 365).
- Accessed software through a browser with no installation or infrastructure management.
- Used tools where everything—app, updates, security—is handled by the provider.

SaaS is fully managed software you simply use, with no responsibility for infrastructure or platform.

2) Why does Microsoft offer a free credit specifically to students rather than everyone?

1) Students become future professionals

If students learn Azure early, they're more likely to use Azure in their careers. Cloud platforms have a steep learning curve, so once someone becomes comfortable with one, they tend to stick with it.

This is long-term customer acquisition.

2) It builds a skilled Azure workforce

Companies adopt cloud platforms based on available talent. By training students for free, Microsoft increases the number of Azure-skilled graduates entering the job market.

More Azure-skilled workers → more companies choosing Azure.

3 Students don't have money, but they do have time to learn

Students often can't afford cloud resources. Free credits remove the financial barrier and encourage experimentation, projects, and certifications.

This grows the ecosystem organically.

4 Offering free credit to everyone would be extremely expensive

Cloud resources cost real money. If Microsoft gave free credits to all users, people would run expensive workloads for free, causing:

- massive financial loss
- abuse (crypto mining, large-scale compute jobs)
- unsustainable demand

Students are a controlled, high-value group.

5 Keeps Microsoft competitive with AWS and Google Cloud

AWS Educate and Google Cloud for Students also offer free credits. If Microsoft didn't match this, students would learn competitors' platforms instead.

6 Universities influence enterprise adoption

Educational institutions often choose platforms based on student benefits. If students graduate already trained in Azure, companies benefit by hiring people who already know the tools.

This increases enterprise demand for Azure services.

3) If your class's App Service had instead been deployed on a paid tier, what would you check in Cost Management to catch a billing problem early?

1 Cost by Resource (identify which service is burning money)

Go to Cost Management → Cost Analysis → Cost by Resource. Here you check whether:

- The App Service Plan cost suddenly increased
- Another resource linked to the App Service (Storage, Networking, Logs) is unexpectedly high
- A single resource is dominating the bill

This is the fastest way to spot a runaway cost.

2 Daily or Hourly Cost Trends (detect sudden spikes)

Switch the view to Daily or Hourly spending. You're looking for:

- A sudden jump in cost after deployment
- Costs rising even when the app isn't being used
- A pattern that doesn't match expected usage

Paid tiers charge more for CPU, memory, and scaling — spikes show misconfiguration.

3 App Service Plan SKU and Scaling Costs

In Cost Management, filter by App Service Plan and check:

- Whether the plan is using a higher tier than intended (e.g., P1v3 instead of B1)
- Whether autoscaling is causing extra instances to spin up
- Whether the app is consuming more compute than expected

Paid tiers charge per instance — scaling mistakes get expensive fast.

4) Give one advantage and one risk of the Pay-As-You-Go pricing model compared with buying and owning physical servers.

Advantage: You only pay for what you actually use, which means no upfront hardware cost, no maintenance, and no paying for idle capacity. If your workload is small, your bill stays small. This gives far better cost efficiency and flexibility than owning physical servers.

Risk: Costs can grow unpredictably, especially if an app scales unexpectedly, runs inefficient code, or is misconfigured. With Pay-As-You-Go, a sudden spike in usage can create a large bill, whereas physical servers have fixed, predictable costs.