第一题：

SELECT

AVG(retention) AS avg\_ret

FROM (

SELECT

user\_id,

MIN(date) AS first\_login\_date,

MAX(CASE WHEN DATE\_ADD(MIN(date), INTERVAL 1 DAY) = MAX(date) THEN 1 ELSE 0 END) AS retention

FROM

login\_logs

GROUP BY

user\_id

) AS user\_retention\_summary;

第二题：

SELECT

up.id AS user\_id,

COALESCE(COUNT(ar.question\_id), 0) AS total\_questions,

COALESCE(SUM(CASE WHEN ar.result = 'right' THEN 1 ELSE 0 END), 0) AS correct\_answers

FROM

user\_profile up

LEFT JOIN

question\_practice\_detail ar ON up.device\_id = ar.device\_id

WHERE

up.university = '北京大学'

AND (ar.date BETWEEN '2024-08-01' AND '2024-08-31' OR ar.date IS NULL)

GROUP BY

up.id;