c/w

LEH

Tuesday 1st July 2025

Problem Solving

L.O: To be able to problem solve

Starter

The first part of a table is shown below.

Row			
1	5	10	15
2	20	25	30
3	35	40	45
4	50	55	60
5	65	70	75

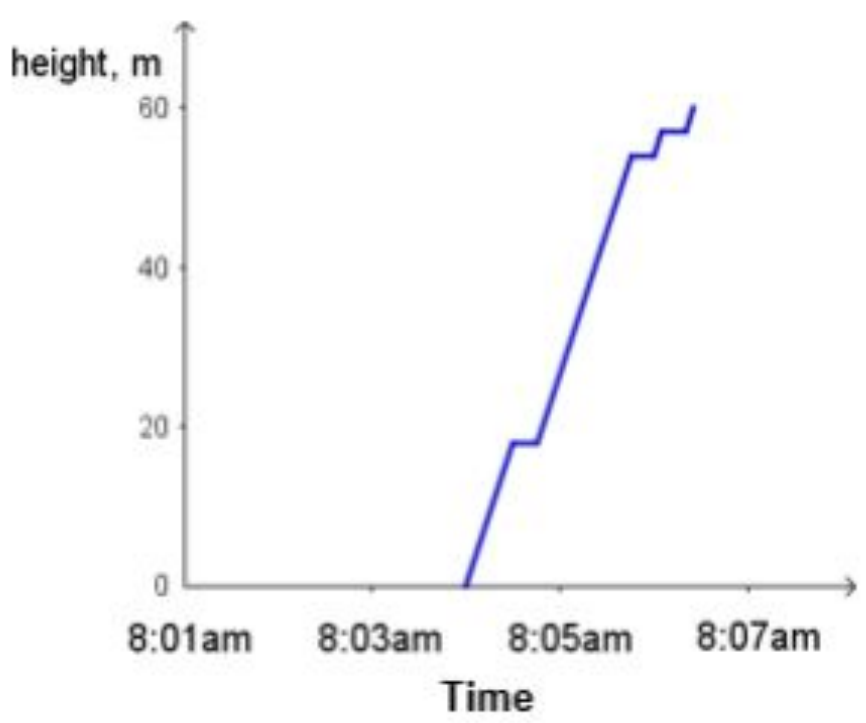
Which row of the table contains the number 2020?

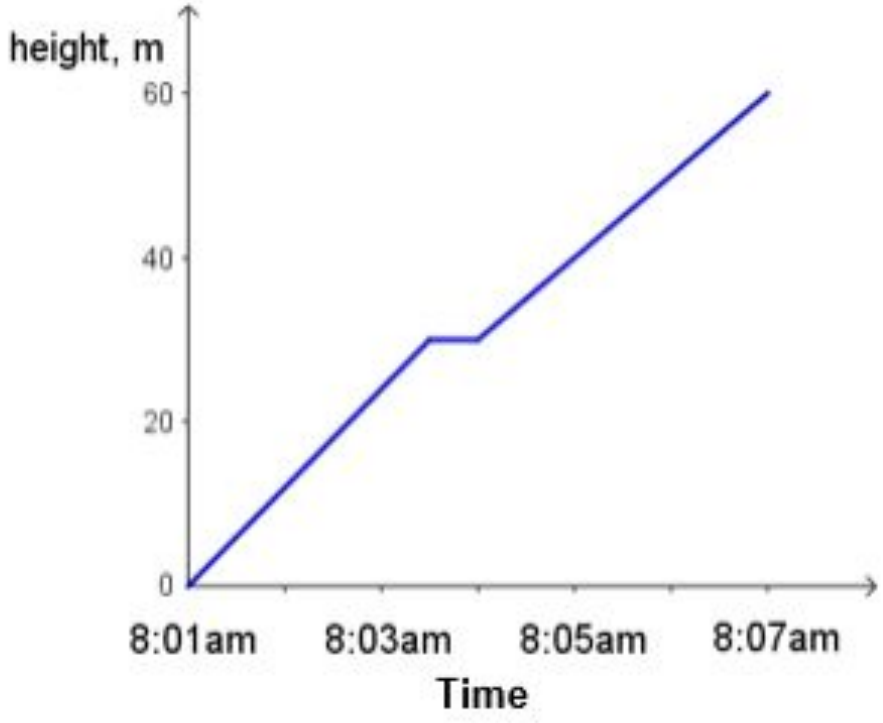
The first part of a table is shown below.

Row			
1	5	10	15
2	20	25	30
3	35	40	45
4	50	55	60
5	65	70	75

Which row of the table contains the number 2020?

Two work colleagues arrive on the ground floor of a building at 8.01 am for a meeting on the twentieth floor. The twentieth floor is 60 m above ground level. One decides to take the stairs, the other the lift.



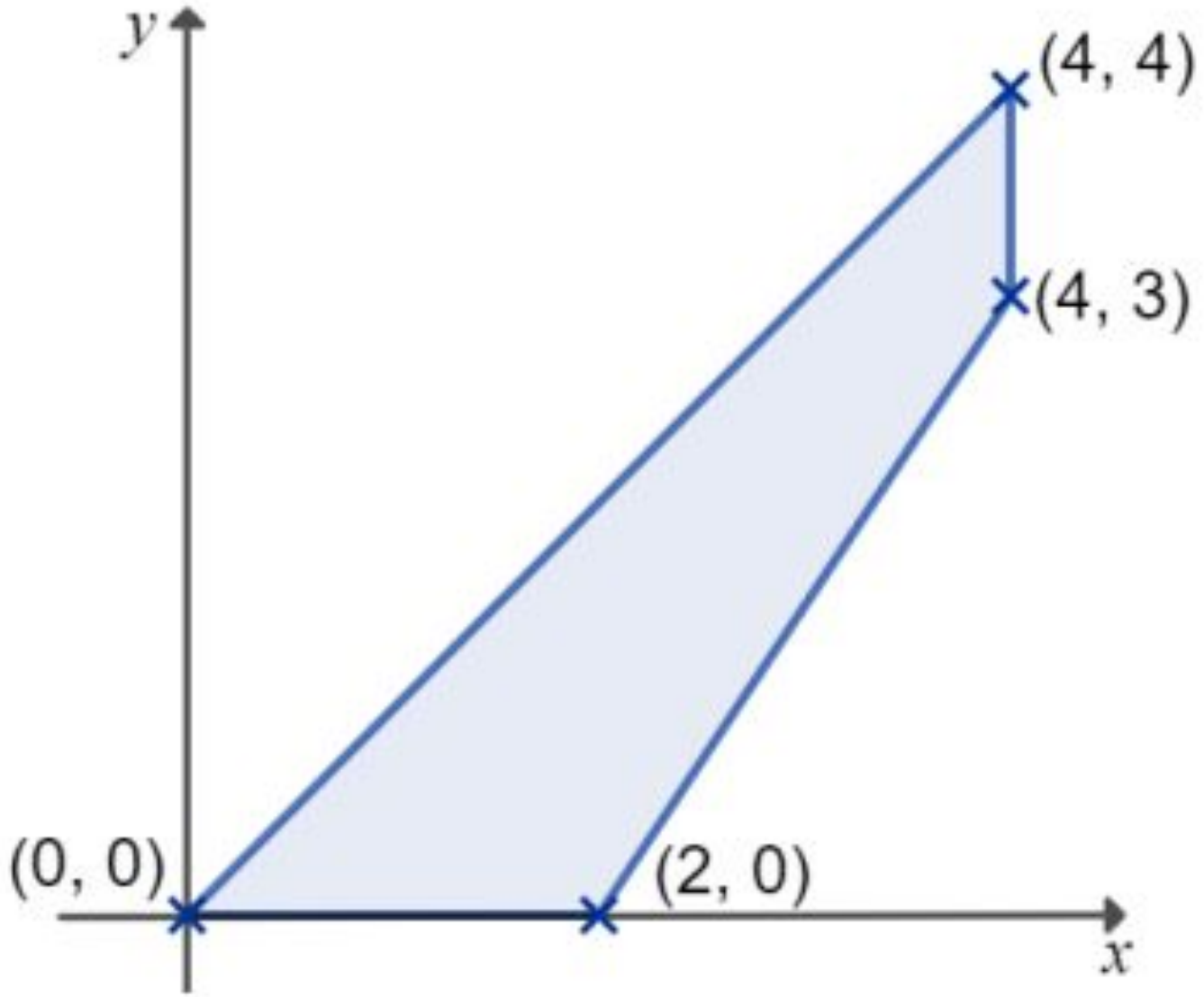


They both arrive on the twentieth floor at 8.07 am. In the meeting room they sketch graphs showing their height above the ground in terms of time between 8.01 am and 8.07 am.

(a) Which graph do you think shows the person who took the lift? Why?

(b) What assumptions might have been made in drawing these graphs?

Calculate the shaded area in the diagram below:

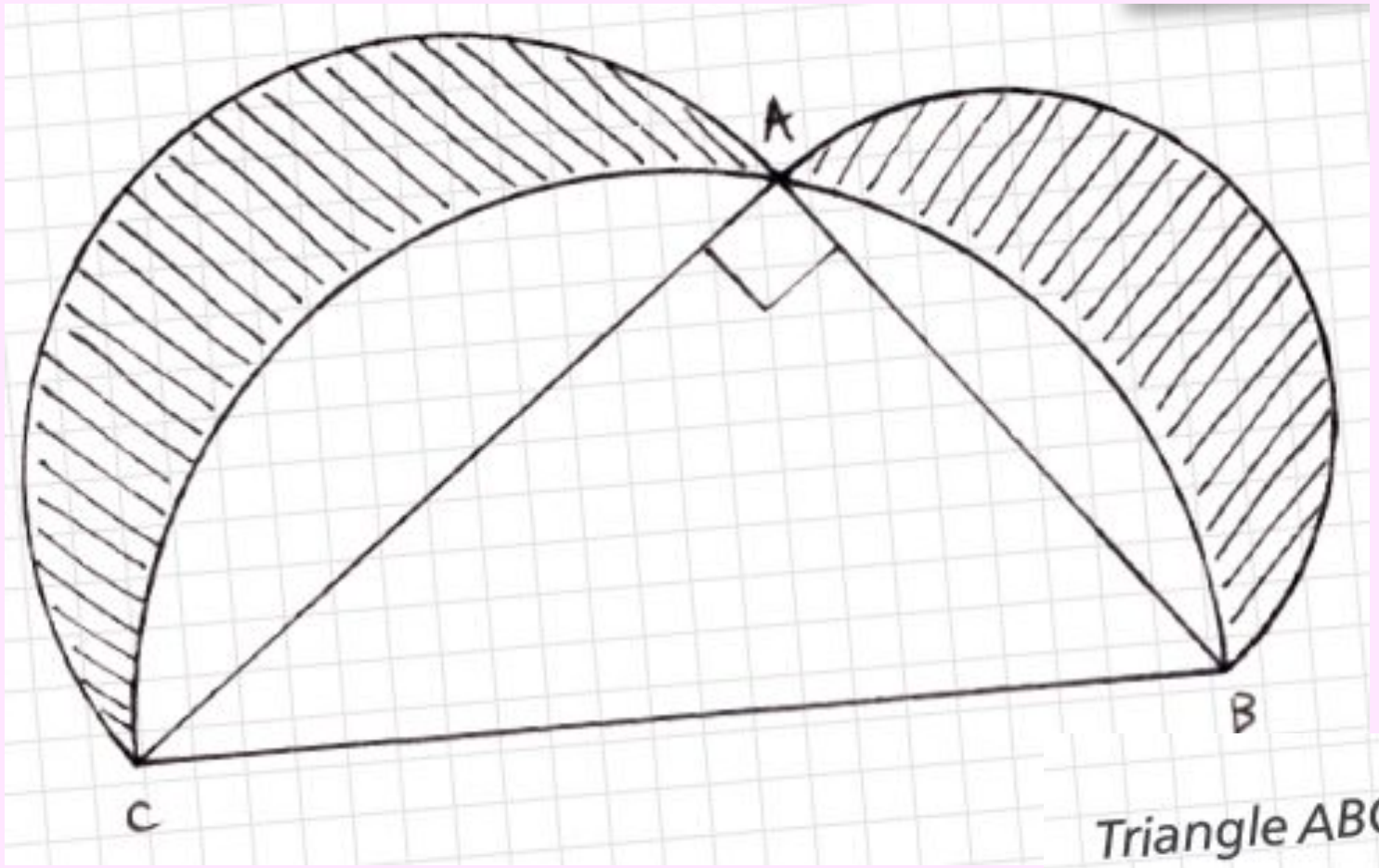


Currently, Aisha has a job in a local cafe working for 7 hours each Saturday at £8 per hour. She is given lunch for free in the café.

Aisha is offered a new job, working for 6 hours each Saturday, but at £12 per hour. This job is at the library where lunch in not provided. She will have to buy lunch which costs £6. To get to the library Aisha will need use the train.

(a) Assuming Aisha is only concerned about maximising her income after expenses and that she accepts the new job, what can you deduce about the train fare?

(b) What factors, other than income, would you advise Aisha to consider when making her decision?



Triangle ABC has a right-angle at A.

Semi-circles are drawn with BA, AC and BC as diameters as shown.

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Given that AC = 8 and BC = 10, write down the value of one third of the total shaded area.