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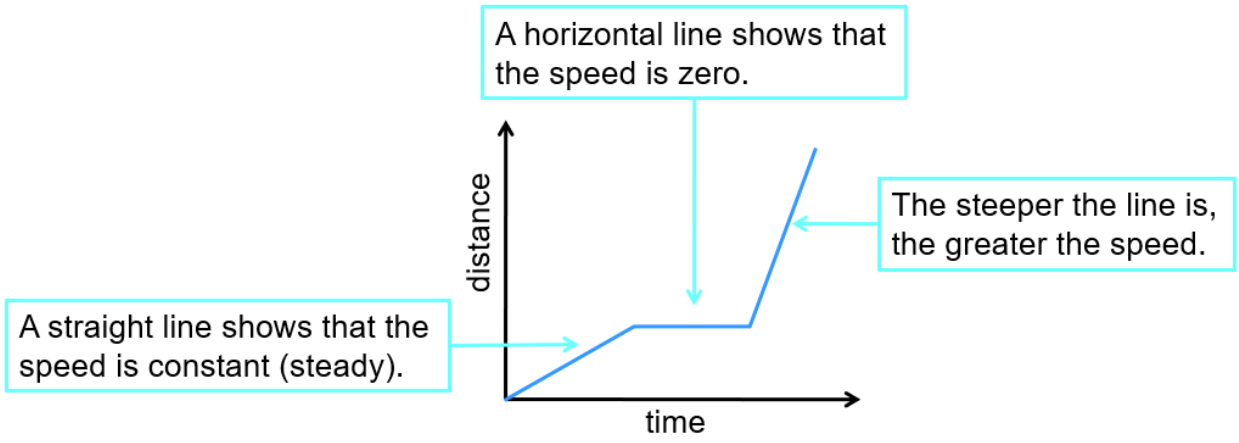
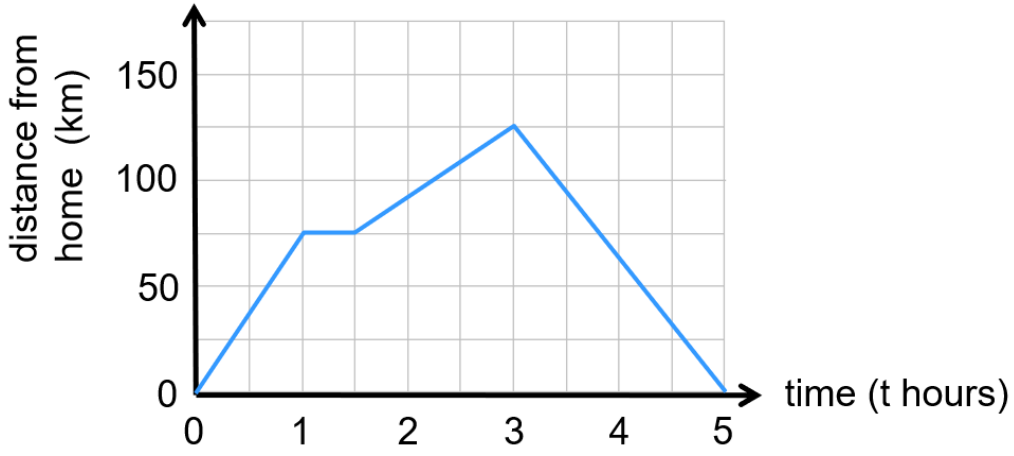
# DISTANCE-TIME GRAPHS

The steepness of a distance-time graph represents the speed.




$$\text{speed} = \frac{\text{distance travelled}}{\text{time taken}}$$

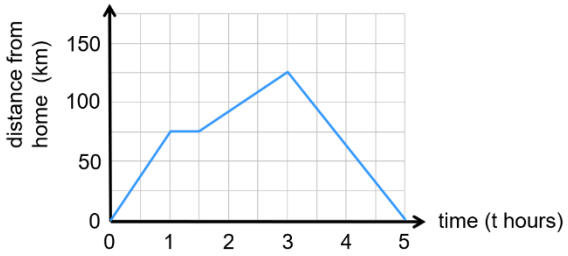
**Question 1**



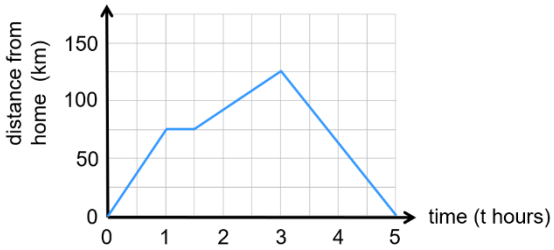

The distance-time graph shows the journey of a car.

**a** Calculate the speed of the car during the first hour of the journey.

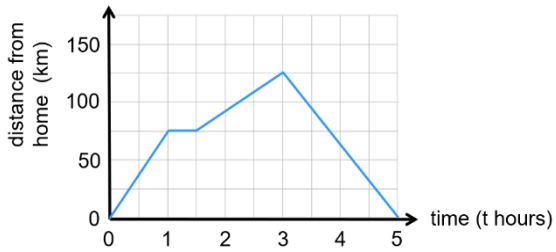
b. Calculate the speed of the car between t = 1.5 and t = 3.




c. Calculate the speed of the car between t = 3 and t = 5.




d. Calculate the average speed for the whole journey.




e. Explain what is happening between t = 1 and t = 1.5.

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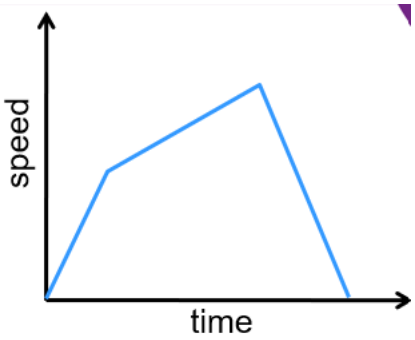
# SPEED-TIME GRAPHS

In a speed-time graph:

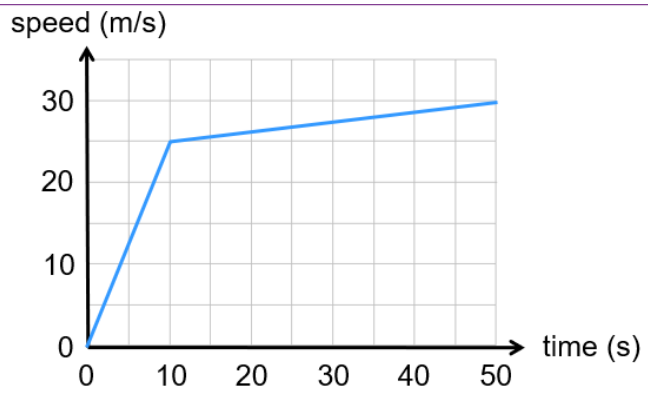



gradient = acceleration

and

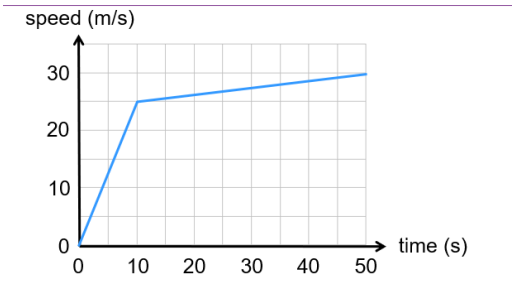
area under graph = distance travelled

**Question 1**

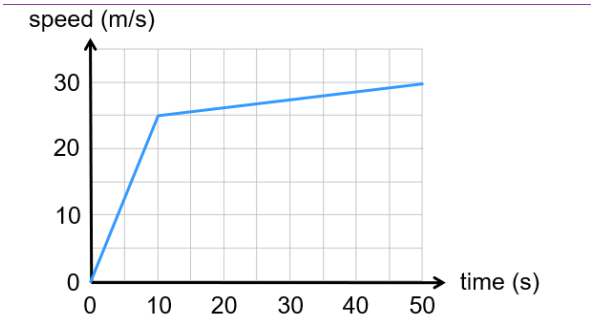



a. Calculate the acceleration between 0 and 10 seconds.

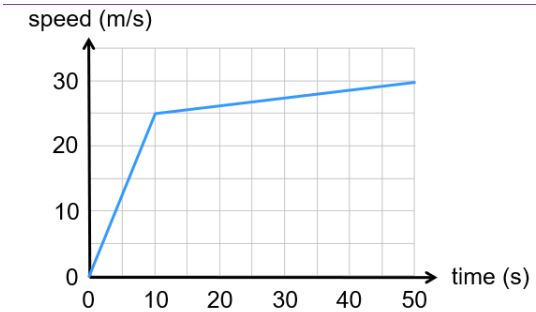
b. Calculate the acceleration between 10 and 50 seconds.



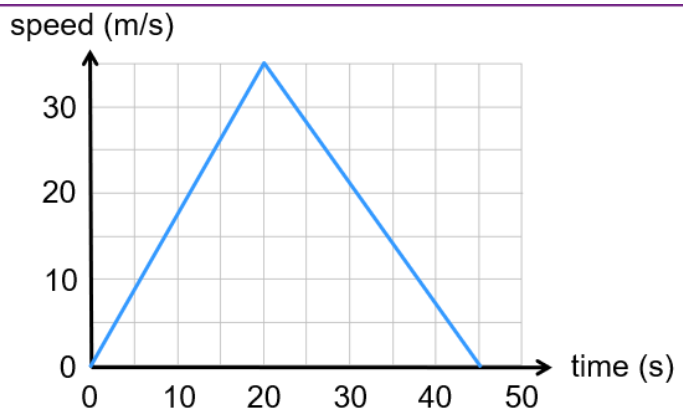

c. Calculate the the total distance travelled in the first 50 seconds.




d. Calculate the average speed over the first 50 seconds.

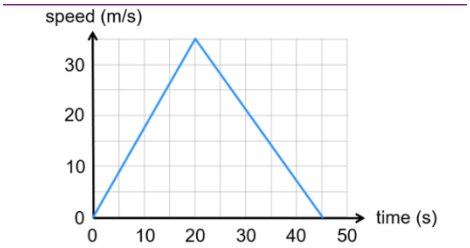


**Question 2**

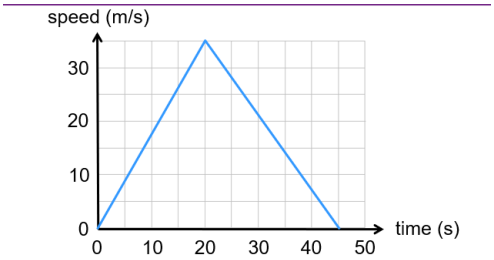



The speed-time graph shows the speed of a car over 45 seconds.

a. Calculate the acceleration between 20 and 45 seconds.




b. Calculate the the total distance travelled by the car.




c. Calculate the average speed over the 45 seconds.