

# Numerical Problems for Class 9 Motion

Let's dive into a selection of motion numerical problems to hone your skills and deepen your understanding of these fundamental concepts.

- 1) A car starts from rest and accelerates at  $2 \text{ m/s}^2$  for 5 seconds. Calculate its final velocity.
  
- 2) A ball is dropped from a height of 40 meters. Calculate the time it takes to hit the ground.
  
- 3) An object travels at a constant velocity of  $15 \text{ m/s}$  for 10 seconds. Calculate the total distance it covers.
  
- 4) A bicycle accelerates from 0 to  $10 \text{ m/s}$  in 4 seconds. Calculate its acceleration.
  
- 5) A train decelerates from  $25 \text{ m/s}$  to  $10 \text{ m/s}$  in 15 seconds. Calculate its acceleration.
  
- 6) A car travels 200 meters in 20 seconds. Calculate its average speed.
  
- 7) A rocket accelerates at  $20 \text{ m/s}^2$  for 8 seconds. Calculate its final velocity.
  
- 8) An object accelerates at a rate of  $-5 \text{ m/s}^2$ . Calculate its deceleration.
  
- 9) A stone is thrown horizontally from a cliff 25 meters high. Calculate the time it takes to reach the ground.
  
- 10) A sprinter covers 100 meters in 10 seconds. Calculate his average speed.
  
- 11) A car moves with a constant velocity of  $30 \text{ m/s}$  for 2 minutes. Calculate the distance it covers.
  
- 12) A skateboarder accelerates from  $4 \text{ m/s}$  to  $12 \text{ m/s}$  in 2 seconds. Calculate the acceleration.

[Physicsteacher.in](http://Physicsteacher.in) portal for K12 and engineering students presents:

- 13) A plane accelerates from 0 to 300 m/s in 20 seconds. Calculate its acceleration.
- 14) A cyclist travels 3 km in 15 minutes. Calculate his average speed.
- 15) A spaceship accelerates at  $10 \text{ m/s}^2$  for 30 seconds. Calculate its final velocity.
- 16) A stone is thrown vertically upwards with 50 m/s velocity. Calculate the time it takes to return to the ground.
- 17) A car accelerates at a rate of  $5 \text{ m/s}^2$ . Calculate the time it takes to reach a speed of 20 m/s.
- 18) A train decelerates from 20 m/s to 10 m/s in 10 seconds. Calculate its deceleration.
- 19) A cyclist covers 15 km in 45 minutes. Calculate his average speed.
- 20) A rocket accelerates at  $50 \text{ m/s}^2$  for 5 seconds. Calculate its final velocity.
- 21) A stone is thrown horizontally from a height of 15 meters. Calculate the time it takes to hit the ground.
- 22) A car moves with a constant velocity of 18 m/s for 3 minutes. Calculate the distance it covers.
- 23) A scooter accelerates from 5 m/s to 15 m/s in 3 seconds. Calculate the acceleration.
- 24) A plane accelerates from 0 to 500 m/s in 30 seconds. Calculate its acceleration.
- 25) A jogger covers 5 km in 25 minutes. Calculate their average speed.