

10 Kinetic Energy Equation Questions

1. A 0.16 kg cricket ball is bowled at 25 m/s during a school cricket match. Calculate the kinetic energy of the ball.
2. A 12 kg suitcase moves along an airport conveyor belt at 2.5 m/s. Calculate its kinetic energy.
3. A 70 kg skateboarder travels down a gentle slope at 4 m/s. Calculate the skateboarder's kinetic energy.
4. A 1 300 kg family car travels through a 30 mph speed limit at 13.4 m/s. Calculate the kinetic energy of the car.
5. A 220 kg motorbike and rider have a kinetic energy of 39 600 J while travelling along a dual carriageway. Calculate their speed.
6. A 0.43 kg football has a kinetic energy of 86 J just after being kicked. Calculate the speed of the football.
7. A cyclist travelling to work has a kinetic energy of 3 600 J. If the cyclist and bicycle have a combined mass of 80 kg, calculate their speed.
8. A 38 tonne lorry travelling on the M25 has a speed of 20 m/s. Calculate its kinetic energy. Give your answer in standard form.
9. A rollercoaster train has a kinetic energy of 1 440 000 J as it races through the lowest point of the track. If the train and passengers have a combined mass of 4 500 kg, calculate its speed.
10. An electric car with a mass of 1 800 kg accelerates from 10 m/s to 25 m/s.

Calculate:

- a) the kinetic energy at 10 m/s
- b) the kinetic energy at 25 m/s
- c) the increase in kinetic energy during the acceleration.