Velocity vs. Time

For each short story, draw a **velocity vs. time graph** that matches the description.

- On your graph, time is on the x-axis and velocity on the y-axis.
- Positive velocity means moving forward; negative velocity means moving back toward the start.
- Show accelerations (sloped lines), constant velocities (horizontal lines above or below the axis), and rest (a flat line on the time axis). Label axes clearly.

1. A skateboarder rolls forward at a constant speed.

2. A runner stands still for a few seconds, then jogs forward at a steady pace.

3. A bicyclist rides at a steady speed, slows evenly to a stop, then stays at rest.

4. A dog starts walking slowly, speeds up evenly, then walks steadily at that faster speed.

5. A car moves at a constant speed, brakes evenly to a stop, waits, then accelerates smoothly forward again.

6. A student runs quickly, stops suddenly, stands still, then jogs back toward the start at a slower constant speed.

7. A sprinter accelerates rapidly out of the blocks, maintains top speed for several seconds, then decelerates evenly to a stop.

8. A bus moves at a slow constant speed, accelerates steadily to a higher speed, cruises, then decelerates smoothly to a stop.

9. A train departs a station, accelerates steadily, maintains high speed, brakes smoothly, and stops at the next station.

10. A car backs slowly out of a driveway (negative velocity), stops, then accelerates forward onto the road and drives at a steady speed.

11. A toy car is pushed: it speeds up steadily, slows down to a stop on its own, then is pushed again to a faster constant speed.

12. A jogger runs at steady speed, pauses, then runs back toward the start at the same speed.

13. A roller coaster accelerates downhill, levels out at a high constant speed, brakes evenly to zero, then waits.

14. A cyclist pedals forward at a constant speed, coasts while slowing evenly to rest, pauses, then accelerates backward down a hill (negative velocity).

15. A driver accelerates quickly forward, cruises, slams the brakes to zero, waits, then accelerates backward in reverse.

16. A rowboat moves forward slowly at constant speed, accelerates strongly, slows gradually to rest, then drifts backward at a gentle constant speed.

17. A drone rises upward at constant velocity, accelerates faster, hovers (zero velocity), then descends steadily to land (negative velocity).

18. A runner sprints forward, slows evenly to rest, reverses immediately into a steady jog back toward the start, then slows to rest again.

19. A courier accelerates forward to a sprint, maintains it, brakes evenly to zero, accelerates backward (negative velocity), cruises, then brakes to rest.

20. A spacecraft accelerates gently forward, coasts at constant velocity, decelerates smoothly to zero, reverses with steady acceleration, cruises backward, and finally decelerates to rest at the origin.