

Motion Problems – Speed, Velocity and Momentum problems. Do Not Write on this Paper. Put all answers on a separate sheet of notebook paper. Be sure to follow the steps for solving physics problems.

1. Find the speed of a long-distance runner who runs 30 miles in 6 hours.
2. A jet airplane flies from St. Louis, Missouri, to Phoenix, Arizona, in 3 hrs. The distance is 1,500 miles. what is the plane's speed?
3. It takes a runner 10 seconds to run 100 yards. What is the runner's speed?
4. A sprinter runs the 100-meter race in 10 seconds. What is the sprinter's speed?
5. A train travels a distance of 1200 kilometers in 20 hours. What is the speed of the train?
6. A car travels 500 miles east in 10 hours. What is the speed of the car?
7. A car travels 500 miles east in 10 hours. What is the velocity of the car?
8. Find the velocity of a long-distance runner who runs south for 30 miles in 6 hours.
9. Emily rode her horse 2 hours and traveled 4 miles. What was her speed?
10. Sally drove at a speed of 50 km / hr south for 2 hours. How far did she travel?
11. Hannah was driving northeast at a velocity of 60 km/hr for .5 hrs (30 minutes). How far did she travel?
12. Two planes leave the same airport. One plane is flying east at a velocity of 300 km/hr and the other plane is flying south at a velocity of 350 km/hr. If both planes traveled for 2 hours, what distance did each plane travel?
13. A high school student ran the 100 meter dash in 12.20 seconds. What was the student's velocity?
14. A horse ran 500 meters in 50 seconds. What is the velocity of the horse?
15. A funny car at a drag strip went 800 meters in 9 seconds. What was it's velocity?
16. A pigeon flew 1000 meters in 48 seconds. What was the pigeon's velocity?
17. A hiker walked a 5 kilometer trail in 65 minutes. What was his velocity?
18. A dog chased a ball 25 meters in 3 seconds, what was the speed of the dog?
19. What is the velocity of a model rocket that climbed 950 meters in 3 seconds?
20. What would the velocity be of a bullet that strikes a tin can 350 meters away in 0.25 seconds?
21. What is the speed of a subway train that traveled 13 kilometers in 8 minutes?
22. A school bus drove at a velocity of 23.04km/m for 18 minutes. What distance did the bus travel?
23. A motorcycle has a mass of 250 kg and a velocity of 28 m/s, what is it's momentum
24. A skateboarder with a mass of 60 kg is moving at a velocity of 3 m/s. What is the skateboarder's momentum?
25. What is the velocity of a car that is moving with a momentum of 35 kg x m/s and has a mass of 945 kg?
26. What is the mass of a car with a momentum of 6480 kg x m/s and a velocity of 18 m/s?
27. What is the momentum of a 620 kg truck traveling at a velocity of 33 m/s?
28. A bike rider went from 3 m/s to 8 m/s in 2 seconds, what was his acceleration?
29. A car went from 110 m/s to 80 m/s in 20 seconds. What was the acceleration of the car?

30. A car had a change in velocity of 40 m/s with an acceleration of 5 m/s².
How long did it take this acceleration to occur?