

Name: _____

Mr. Croom's Physics

Date: _____

Chapter 2: One Dimensional Motion

6. Jupiter, the largest planet in the solar system, has an equatorial **radius** of about 71,000 km (more than 10 times that of Earth). Its period of rotation, however, is only 9.86 h. That means that every point on Jupiter's equator "goes around the planet" in that interval of time.
- Calculate the average speed (in km/h) of an equatorial point during one period of Jupiter's rotation.

b. Convert that answer from part a to m/s

7. A person runs 400 meters east in 59 seconds. Then walks 100 meters east in 45 second. Finally the person runs 300 meters east in 50 seconds. What is the persons average velocity

8. A truck drives north 40 km in 0.6 hours. Then the drivers stops for 0.4 hours. Finally the truck drives 80 km more north in 1 hour. What is the average velocity of the truck in m/s?

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9. A car drives 400 miles north in 10 hours. The driver then sleeps for 8 hours. Then the driver drives 300 miles south in 7 hours. What was the average velocity of the trip?
10. (Holt P.47 #4) Two students walk in the same direction along a straight path, at a constant speed—one at 0.90 m/s and the other at 1.9 m/s.
- Assuming that they start at the same point and the same time, how much sooner does the faster student arrive at a destination 780m away?
 - How far would the students have to walk so that the faster student arrives 300 seconds before the slower student (the difference or change in time is 300 seconds!)

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11. A person leaves the start line and travels 300 meters south in 55 seconds. Then the person stops for 15 second. Now the person heads 200 meters north at 4 m/s. Finally the person travels 2 m/s north for 60 seconds.
- What is the displacement of the person?

b. How long did this person's journey take?

c. What is the average velocity of the person throughout the trip?