

Average Speed Problems

/30

Name : _____ Date : _____

All of your solutions should follow the proper format, include units and put a box around your final answer.

$$v_{av} = \frac{\Delta d}{\Delta t}$$

1. [5 marks] Rebecca decides to run to school; a total distance of 6.7 km. She has to slow down twice to cross some busy streets in Acton, but overall the journey takes her 0.83 h.
 - a) Calculate Rebecca's average speed during the trip?
 - b) Convert the average speed to m/s.
 - c) Rebecca has the same average speed on the way home from school, but she takes a different route which takes her 0.83h. Calculate the distance in kilometers for the second route.
 - d) Rebecca then decides to run from her home to the store, which is 2.2 km from her house. Calculate the length of time it would take, in minutes, if she is still running at the average speed from part a).

2. [5 marks] Tommy is trying to predict the time required to ride his bike to a nearby beach. He knows that the distance is 45 km and from other trips, that he can usually average about 15 km/h including slowing down for climbing hills.
 - a) Calculate how long the trip should take.
 - b) Calculate the average speed he would have to travel at in order make the trip in exactly 1.5 hours.

3. [5 marks] The cruise control of a Ferrari is set at 134 km/h. Calculate the distance that would be traveled by the car during a time interval of 11350 seconds?

4. [5 marks] In 1997, *Thrust SSC*, the world's fastest jet-engine car, traveled 604 m at an average speed of 319 m/s.
 - a) Calculate how long this took.
 - b) Calculate the distance travelled in 2.7 minutes of travel at this speed (convert answer to kilometers).
 - c) Convert 319 m/s to kilometers per hour.



Kinematics – Average Speed Problems

5. [5 marks] A pesky bird travels 112 m for 25 seconds, then 330 m for 80 seconds. The bird then rests for 35 seconds before traveling 400 m in 110 seconds.
 - a) Calculate the total distance traveled, total time, and average speed.

6. [5 marks] In a marathon race, one runner moving at 6.1 m/s passes a second runner moving at 17.3 km/h. Calculate the distance between the runners 17 min. after the one runner passes the other?