Assignment 1 – Physics DVHS

Answer questions on a separate page. Show your work for every question and ensure your final answers are in the appropriate amount of significant figures (when applicable).

- 1. Describe the differences between uniform and non- uniform motion. Give a specific example of each type of motion.
- 2. Laser light, which travels in a vacuum at 3.00 × 108 m/s, is used to measure the distance from Earth to the Moon with great accuracy. On a clear day, an experimenter sends a laser signal toward a small reflector on the Moon. Then, 2.51 s after the signal is sent, the reflected signal is received back on Earth. What is the distance between Earth and the Moon at the time of the experiment?
- 3. A ferry boat is crossing a river that is 8.5×102 m wide. The average velocity of the water relative to the shore is 3.8 m/s [E] and the average velocity of the boat relative to the water is 4.9 m/s [S].
 - a. Determine the velocity of the ferry boat relative to the shore.
 - b. How long does the crossing take?
 - c. Determine the displacement of the boat as it crosses from the north shore to the south shore.