

## Module 02-Lesson 5

### Motion with Constant Velocity

**Question 1:** Light travels at a speed of about  $3 \times 10^8$  m/s. How many kilometres does a pulse of light travel in a time interval of 0.1 s, which is about the blink of an eye?

**Question 2:** The speed with which tectonic plates slide due to motion of Earth's mantle is typically estimated to be about 5.0 cm/yr. Assume that this rate remains constant over time. If you and your neighbour live on opposite sides of a plate boundary where the plates move directly opposite of one another, how far apart do your houses move in a century?

**Problem:** A motorboat is initially 4.0 km West of a bridge and is travelling with a constant velocity of 20.0 km/h due East. A second motorboat is initially 3.0 km East of the bridge and is travelling with a constant velocity of 15.0 km/h due West. How far are the boats from the bridge when they meet?