

## COT 3100 Recitation: $D = RT$ Problems

### Set #1

- 1) Jenny drives from home to the beach, averaging 30 miles per hour. On the return trip, she averages 60 miles an hour. What is the average speed for her round trip?
- 2) Mr. Earl E. Bird leaves his house for work at exactly 8 AM every morning. When he averages 40 miles per hour, he arrives at his workplace three minutes late. When he averages 60 miles per hour, he arrives three minutes early. At what average speed, in miles per hour, should Mr. Bird drive to arrive at his workplace precisely on time?
- 3) David drives from his home to the airport to catch a flight. He drives 35 miles in the first hour, but realizes that he will be 1 hour late if he continues at this speed. He increases his speed by 15 miles per hour for the rest of the way to the airport and arrives 30 minutes early. How many miles is the airport from his home?
- 4) A swimming pool is the shape of a rectangular prism with a length of 12 feet, a width of 10 feet and a depth of 8 feet. The pool is full at Tuesday at 8 am but springs a leak from the bottom of the pool surface that leaks 1 cubic inch of water per second into the ground. (This means that slowly, the water level in the pool decreases.) How much lower (in inches) is the water level at Wednesday morning at 8 am as compared to Tuesday at 8 am when the pool was full? Which piece of information given in the problem is mostly irrelevant?

### Set #2

- 1) Casey drove a total of 100 miles. For the first portion of the trip she averaged 40 miles per hour and for the second/last portion of the trip she averaged 55 miles per hour. If her average speed for the entire trip was 50 miles an hour, how long (in miles) was the first portion of her trip? Please express your answer as a fraction in lowest terms.
- 2) Jessica is going from Orlando to Miami and she takes a 15 minute break at Vero Beach. Her goal is to average 60 miles per hour for the whole trip. The distance between Orlando and Vero Beach is 100 miles and the distance between Vero Beach and Miami is 140 miles. If her average driving speed from Orlando to Vero Beach is 50 miles per hour, how fast must her average speed be driving from Vero Beach to Miami to achieve her goal?
- 3) The current in a river is flowing steadily at 3 miles per hour. A motor boat which travels at a constant rate in still water goes downstream 4 miles and then returns to its starting point. The trip takes one hour, excluding the time spent in turning the board around. What is the ratio of the downstream to the upstream rate?
- 4) Selena and Trina live 13 miles apart. Yesterday Selena started to ride her bicycle toward Trina's house. A little later Trina started to ride her bicycle towards Selena's house. When they met, Selena had ridden for twice the length of time as Trina and at four-fifths of Trina's rate. How many miles had Trina ridden when they met?