

# MA 16020 LESSON 8: INTEGRATION BY PARTS (PROBLEM SET)

**Example 2:** The velocity of a car over the time period  $0 \leq t \leq 3$  is given by the function

$$v(t) = 50t e^{-t/4} \text{ miles per hour,}$$

where  $t$  is time in hours. What was the distance the car traveled in the first 30 minutes?

**Example 3:** A model for the ability of a child to memorize information, measured on a scale from 1 to 100, is given by

$$M(t) = 1 + 3.4t \ln(t)$$

when  $2 \leq t \leq 8$  where  $t$  is the child's age in years. Find the child's average memorization ability between ages 3 and 6.