

**MA 16020 LESSON 15: DIFFERENTIAL EQUATIONS –
SEPARATION OF VARIABLES
(PROBLEM SET)**

Example 4: In a particular chemical reaction, a substance is converted into a second substance at a rate proportional to the square of the amount of the first substance present at any time, t . Initially, 50 grams of the first substance was present, and 1 hour later only 14 grams of the first substance remained. What is the amount of the first substance remaining after 7 hours?

Example 5: A wet towel hung on a clothesline to dry outside loses moisture at a rate proportional to its moisture content. After 1 hour, the towel has lost 32% of its original moisture content. After how long will the towel have lost 74% of its moisture content?

