

Example 4 At the end of each year the value of a certain machine has depreciated by 20% of its value at the beginning of that year. If its initial value was Rs 1250, find the value at the end of 5 years.

Solution After each year the value of the machine is 80% of its value the previous year so at the end of 5 years the machine will depreciate as many times as 5.

Hence, we have to find the 6th term of the G.P. whose first term a_1 is 1250 and common ratio r is .8.

Hence, value at the end 5 years = $t_6 = a_1 r^5 = 1250 (.8)^5 = 409.6$