

# Remainder and Factor Theorems

Group Members : 1. \_\_\_\_\_

2. \_\_\_\_\_

3. \_\_\_\_\_

Class : \_\_\_\_\_

Date : \_\_\_\_\_

*Instruction.* Read and understand the questions carefully.

Case 1

The number of international travelers to the United States since 1986 can be modelled by the equation  $T(x) = 0.02x^3 - 0.6x^2 + 6x + 25.9$ , where  $x$  is the number of years since 1986 and  $T(x)$  is the number of travelers in 2006, you can evaluate the function for  $x = 20$ .

Solution

Given :

Find :

Alternative solution :

## Case 2

When a certain type of plastic is cut into sections, the length of each section determines its strength. The function  $P(x) = x^4 - 14x^3 + 69x^2 - 140x + 100$  can describe the relative strength of a section of length  $x$  feet. Sections of plastics  $x$  feet long, where  $P(x) = 0$ , are extremely weak. After testing the plastic, engineers discovered that section 5 feet long were extremely weak.

- Show that  $x - 5$  is factor of the polynomial function
- Are the other lengths of plastic that are extremely weak? Explain your reasoning.

### Solution

Given :

Find :

Alternative solution :

Case 3 :

Find value of  $k$  so that the remainder is 3 from dividend  $x^3 + 4x^2 + x + k$  and divisor  $x + 2$ .

Solution.



Question source : <http://teacherwee.weebly.com/uploads/8/3/8/0/8380923/chap07.pdf>

Please check this video to take clue of each problem

