

Mathematics

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(Chapter – 2) (Polynomials)(Exemplar Problems)

(Class – IX)

Exercise 2.3

Question 13:

By actual division, find the quotient and the remainder when the first polynomial is divided by the second polynomial: $x^4 + 1$; $x - 1$

Answer 13:

We have to divide $x^4 + 1$ by $x - 1$.

$$\begin{array}{r} x^3 + x^2 + x + 1 \\ x-1 \overline{) x^4 + 1} \\ \underline{x^4 - x^3} \\ + x^3 \\ \underline{ + x^3 - x^2} \\ + x^2 - x \\ \underline{ + x^2 - x} \\ + x \\ \underline{ + x} \\ - \\ \underline{ -} \\ 2 \end{array}$$

$$\text{Quotient} = x^3 + x^2 + x + 1$$

$$\text{Remainder} = 2$$

