Long Division of Polynomials

Worksheet 1

Answer each of the following without using a calculator and using the boxes provided for your answers.
Show all of your working.

Click on the link in the Header of this page, or scan the QR Code, to view the online notes, tutorial(s) and answers for this worksheet.

Question 1

Given $f(x) = x^4 - 3x^3 + 4x^2 - 4x + 10$ and $g(x) = x^2 - 3$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 2

Given $f(x) = x^4 - 3x^3 + x^2 - 2x + 3$ and $g(x) = x - 2$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 3

Given $f(x) = 2x^5 + 3x^4 - 6x^2 + x$ and $g(x) = x^3 + x - 1$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 4

Given $f(x) = x^5 + 4x^3 - 3x + 7$ and $g(x) = x + 1$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 5

Given $f(x) = 4x^5 + 2x^4 - 5x^2 + 3$ and $g(x) = 2x^2 + x - 1$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 6

Given $f(x) = 6x^4 - 3x^3 + x^2 - 2x + 3$ and $g(x) = 2x - 3$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 7

Given $f(x) = 5x^5 - 3$ and $g(x) = x^2 - 4$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.

Question 8

Given $f(x) = 8x^6 + 4x^5 - 3x^2 + 4x + 3$ and $g(x) = x + 1$, find an expression for $f(x) \div g(x)$ and write an expression for both the quotient function $Q(x)$ and the remainder function $R(x)$.