Exercise 6C

Therefore, the quotient is $(3x - 8)$ and the remainder is 7.

Q9

Answer :

$$
\begin{array}{r}
x^2 - x - 1 \\
2x+3 \overline{)\,2x^3 + x^2 - 5x - 2} \\
\underline{2x^3 + 3x^2} \quad (-\ -) \\
-2x^2 - 5x \\
\underline{-2x^2 - 5x} \quad (+\ +) \\
-2x - 2 \\
\underline{-2x - 3} \quad (+\ +) \\
1
\end{array}
$$

Therefore, the quotient is $(x^2 - x - 1)$ and the remainder is 1.

Q10

Answer :

$$
\begin{array}{r}
x^2 - x + 1 \\
x+1 \overline{)\,x^3 + 1} \\
\underline{x^3 + x^2} \quad (-\ -) \\
-x^2 + 1 \\
\underline{-x^2 - x} \quad (+\ +) \\
x + 1 \\
\underline{x + 1} \quad (-\ -) \\
0
\end{array}
$$

Therefore, the quotient is x^2-x+1 and the remainder is 0.

Q11

Answer :

$$
\begin{array}{r|l}
x^2 + x + 1 & x^4 - 2x^3 + 2x^2 + x + 4 \quad (x^2 - 3x + 4 \\
 & x^4 + x^3 + x^2 \\
 & - \quad - \quad - \\
\hline
 & -3x^3 + x^2 + x \\
 & -3x^3 - 3x^2 - 3x \\
 & + \quad + \quad + \\
\hline
 & 4x^2 + 4x + 4 \\
 & 4x^2 + 4x + 4 \\
 & - \quad - \quad - \\
\hline
 & \times \\
\hline
\end{array}
$$

Therefore, the quotient is (x^2 - 3x + 4) and remainder is 0.

Q12

Answer :

$$
\begin{array}{r|l}
x^2 - 5x + 6 & x^3 - 6x^2 + 11x - 6 \quad (x - 1 \\
 & x^3 - 5x^2 + 6x \\
 & - \quad + \quad - \\
\hline
 & -1x^2 + 5x - 6 \\
 & -1x^2 + 5x - 6 \\
 & + \quad - \quad + \\
\hline
 & \times \\
\hline
\end{array}
$$

Therefore, the quotient is (x-1) and the remainder is 0.

Q13

Answer :

$$
\begin{array}{r|l}
x^2 - 3x + 4 & 5x^3 - 12x^2 + 12x + 13 \quad (5x + 3 \\
 & \underline{\;x^3 - 15x^2 + 20x\;} \\
 & \;\;(-)\;(+)\;(-) \\
 & 3x^2 - 8x + 13 \\
 & \underline{3x^2 - 9x + 12} \\
 & \;\;(-)\;(+)\;(-) \\
 & x + 1
\end{array}
$$

Therefore, the quotient is (5*x*+ 3) and the remainder is (*x* + 1).

Q14

Answer :

$$
\begin{array}{r|l}
2x^2 - 3x + 5 & 2x^3 - 5x^2 + 8x - 5 \quad (x - 1 \\
 & \underline{2x^3 - 3x^2 + 5x} \\
 & \;\;(-)\;(+)\;(-) \\
 & -2x^2 + 3x - 5 \\
 & \underline{-2x^2 + 3x - 5} \\
 & \;\;(+)\;(-)\;(+) \\
 & \times
\end{array}
$$

Therefore, the quotient is (*x*-1) and the remainder is 0.

Q15

Answer :

$$
\begin{array}{r|l}
2x^2 + x - 1 & 8x^4 + 10x^3 - 5x^2 - 4x + 1 \quad (4x^2 + 3x - 2 \\
 & \underline{8x^4 + 4x^3 - 4x^2} \\
 & \;\;(-)\;(-)\;(+) \\
 & 6x^3 - x^2 - 4x + 1 \\
 & \underline{6x^3 + 3x^2 - 3x} \\
 & \;\;(-)\;(-)\;(+) \\
 & -4x^2 - x + 1 \\
 & \underline{-4x^2 - 2x + 2} \\
 & \;\;(+)\;(+)\;(-) \\
 & x - 1
\end{array}
$$

Therefore, the quotient is (4x^2+ 3*x* -2) and the remainder is (*x*-1).

*********** END **********