Exercise 2C

Question 4:
$f(x) = x^3 - 7x^2 + 6x + 4$
Now, x - 6 = 0 ⇒ x = 6
By the remainder theorem, we know that when f(x) is divide by (x - 6) the remainder is f(6)
Now, $f(6) = 6^3 - 7 \times 6^2 + 6 \times 6 + 4$
= 216 - 252 + 36 + 4
= 256 - 252 = 4
∴ The required remainder is 4.

Question 5:
$f(x) = (x^3 - 6x^2 + 13x + 60)$
Now, x + 2 = 0 ⇒ x = -2
By the remainder the theorem, we know that when f(x) is divide by (x + 2) the remainder is f(-2).
Now, $f(-2) = (-2)^3 - 6(-2)^2 + 13(-2) + 60$
= -8 - 24 - 26 + 60
= -58 + 60 = 2
∴ The required remainder is 2.

Question 6:
$f(x) = (2x^4 + 6x^3 + 2x^2 + x - 8)$
Now, x + 3 = 0 ⇒ x = -3
By the remainder the theorem, we know that when f(x) is divide by (x + 3) the remainder is f(-3).
$f(-3) = 2(-3)^4 + 6(-3)^3 + 2(-3)^2 - 3 - 8$
= 162 - 162 + 18 - 3 - 8
= 18 - 11 = 7
∴ The required remainder is 7.

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