Exercise 2G

Question 47:

Let $x - 2y = z$

Then, $7(x - 2y)^2 - 25(x - 2y) + 12$

$= 7z^2 - 25z + 12$
$= 7z^2 - 21z - 4z + 12$
$= 7z(z - 3) - 4(z - 3)$
$= (z - 3)(7z - 4)$

Now replace z by $(x - 2y)$, we get

$7(x - 2y)^2 - 25(x - 2y) + 12$

$= (x - 2y - 3)[7(x - 2y) - 4]$
$= (x - 2y - 3)(7x - 14y - 4).$

Question 48:

Let $x^2 = y$

Then, $4x^4 + 7x^2 - 2$

$= 4y^2 + 7y - 2$
$= 4y^2 + 8y - y - 2$
$= 4y(y + 2) - 1(y + 2)$
$= (y + 2)(4y - 1)$

Now replacing y by x^2, we get

$4x^4 + 7x^2 - 2$

$= (x^2 + 2)(4x^2 - 1)$
$= (x^2 + 2)(2x + 1)(2x - 1).$

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