"Manipulate polynomials algebraically, including expanding brackets and collecting like terms." (Sta

Question 1

Expand and simplify

$(5 - x)(2x + 1)$

Question 2

Expand and simplify

$(3x + 2y + 1)(x + 5)$

Question 3

Expand and simplify

$x(x - 4)(x + 1)$

Question 4

Simplify

$(2x - 3)^2 - 2(3 - x)^2$

(2 marks)

Question 5

Simplify

$(x + 4)(5x - 3) - 3(x - 2)^2$

(3 marks)

Question 6

Given that $f(x) = (x^2 - 6x)(x - 2) + 3x$, express $f(x)$ in the form $x(ax^2 + bx + c)$, where a, b and c are constants.

Question 7

Expand and simplify

$(2x - y)^3$

Question 8

Given that $f(x) = (x^2 - 6x)(x - 2) + 3x$ can be expressed as $x(x^2 - 8x + 15)$, hence factorise $f(x)$ completely.

Mark scheme

Question 1

$-2x^2 + 9x + 5$

Question 2

$3x^2 + 16x + 2xy + 10y + 5$

Question 3

$x^3 - 3x^2 - 4x$

Question 4

$2x^2 - 9$

$4x^2 - 12x + 9 - 2(9 - 6x + x^2)$	**M1**
$2x^2 - 9$	**A1**

Question 5

$2x^2 + 29x - 24$

$5x^2 + 17x - 12 - 3(x^2 - 4x + 4)$	M1
	A1
$= 2x^2 + 29x - 24$	A1

Question 6

$x(x^2 - 8x + 15)$

Question 7

$8x^3 - 12x^2y + 6xy^2 - y^3$

Question 8

$x(x - 3)(x - 5)$