2i $\quad -9x + 3x + 4x$

$= -2x$

ii $\quad 23y^2 + 8y^2 - 12y^2$

$= 19y^2$

iii) $\quad 18pq - 15pq + 3pq$

$= 6pq$

3i) $\quad 3m + 12m - 5m$

$= 10m$

ii) $\quad 7n^2 - 9n^2 + 3n^2$

$= n^2$

iii) $\quad 25zy - 8zy - 6zy$

$= 11zy$

iv) $\quad -5ax^2 + 7ax^2 - 12ax^2$

$= -10ax^2$

v) $\quad -16am + 4mx + 4am - 15mx + 5am$

$= -7am + 11mx$

4 i) $\quad a + b + 2a + 3b$

$= 3a + 4b$

ii) $\quad 2x + y + 3x - 4y$

$= 5x - 3y$

iii) $\quad -3a + 2b + 3a + b$

$= 3b$

iv) $4+x+5-2x+6x$

$= 9+5x$

5 i) $(3x+8y+7z)+(6y+4z-2x)+(3y-4x+6z)$

$= 3x+8y+7z+6y+4z-2x+3y-4x+6z$

$= (3x-2x+4x)+(8y+6y+3y)+(7z+4z+6z)$

$= 5x+17y+17z$

ii) $3a+5b+2c+2a+3b-c+a+b+c$

$= (3a+2a+a)+(5b+3b+b)+(2c-c+c)$

$= 6a+9b+2c$

iii) $4a^2+8xy-2y^2+8xy-5y^2+x^2$

$= (4a^2+x^2)+(8xy+8xy)-(2y^2+5y^2)$

$= 6a^2+16xy-7y^2$

iv) $9x^2-6x+7+5-4x+6-3x^2$

$= (7+5+6)+(9x^2-3x^2)-(6x+4x)$

$= 18+6x^2-10x$

v) $5x^2-2xy+3y^2-2x^2+5xy+9y^2+3x^2-xy-4y^2$

$= (5x^2-2x^2+3x^2)+(5xy-2xy-xy)+(3y^2+9y^2-4y^2)$

$= 6x^2+2xy+8y^2$

6 i) $a+3y$

ii) $-2a+5$

iii) $-4a^2+7x$

iv) $4a-7b$

v) $x^2+3x^2y+2y^2$

vi) $11-by$

7) Perimeter of the triangle
$= 2x + 3y + x + 5y + 7x - 2y$
$= 10x + 6y$

8) Perimeter of the rectangle
$= 2 \times (6a + 9b + 6a + 9b + 8a - 4b + 8a - 4b)$
$= 28a + 10b$

9 viii) $4qp - 6p^2 - 2q^2 - 9p^2$
$= (-6p^2 - 9p^2) + 4pq - 2q^2$
$= -15p^2 + 4pq - 2q^2$

i) $a + b - 2a + b$
$= a$

ii) $b + 3c - 2b + 2c$
$= -3b + 6c$

iii) $-6b + 2a - 5a + b$
$= 7b + 3a$

10 ix) $-3y^2 + 5xy^2 - 7x^2 - 9x^2y$
$-y^2 \qquad\qquad 4x^2 - 5x^2y$
$-4y^2 - 5xy^2 - 11x^2 - 4x^2y$

9 iv)

$$3a - 2a^2$$
$$- a \qquad \qquad -1 - a^3$$
$$\overline{2a - 2a^2 - 1 - a^3}$$

v)

$$p + 2$$
$$- \quad 1$$
$$\overline{p + 1}$$

vi)

$$-x - y - 3z$$
$$-x - 2y - z$$
$$\overline{2x + 3y + 4z}$$

vii)

$$3a^2 - 4ab + 6b^2$$
$$- \quad 3a^2 - 8ab \mp 2b^2$$
$$\overline{\qquad -4ab - 8b^2}$$

ix)

$$2a^2 + 2abc - 4b^2$$
$$- \qquad -10abc$$
$$\overline{-2a^2 + 8abc + 4b^2}$$

x)

$$a^2 - d^2$$
$$-a^2 \quad -ab - c^2$$
$$\overline{-d^2 - ab - c^2}$$

10 i)

$$8 - x$$
$$-\quad -4x$$
$$\overline{8 + 5x}$$

ii)

$$c + 3d$$
$$-\,\cdot\, 6c$$
$$\overline{9c + 3d}$$

v iii)

$$4a - b - 2c$$
$$-\; 5a + 3b \mp 2c$$
$$\overline{-a + 3b - 4c}$$

vii)

$$b + 6c$$
$$-5a + 2b$$
$$\overline{3a + 3b \mp 6c}$$