Ex 11B

1(i) $13x$ (ii) $3x$ (iii) $15xy^2$ (iv) $-3xy^2$ (v) $14a+5b$

(vi) $11+10xy$ (vii) $-3a+7b$ (viii) $8-2x$ (ix) $2x^2y+15xy^2$

(x) $8xy^2$

2. Add

(i) $-9x+3x+4x = -9x+7x = -2x$

(ii) $23y^2+8y^2-12y^2 = 31y^2-12y^2 = 19y^2$

(iii) $18pq-15pq+3pq$

$= 3pq+3pq = 6pq$

3(i) $15m-5m = 10m$

(ii) $(7+3)n^2-9n^2$

$= 10n^2-9n^2$

$= n^2$

(iii) $25xy-14xy = 11xy$

(iv) $(-5-12)ax^2+7ax^2 = -17ax^2+7ax^2 = -10ax^2$

(v) $(-16+4+5)am+(4-15)mx = -7am-11mx$

4(i) $a+b+2a+2b = a+2a+b+2b = 4b+3a$

(ii) $2x+y+3x-4y = 2x+3x+y-4y = 5y-3y$

(iii) $-3a+2b+2a+b = -3a+3a+2b+b = 3b$

(v) $4+x+5-2x+6x = x-2x+6x+4+5 = 5x+9$

5(i) $3x+8y+72+6y+42-2x+3y-4x+62$

$= 3x-2x-4x+8y+6y+3y+72+42+62$

$= 3x-6x+17y+172$

$= -3x+17y+172$

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

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

$= 6a+9b+3c-c$

$= 6a+9b+2c$

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

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

$= 5x^2+16xy-7y^2$

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

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

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

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

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

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

6(i) $x + 3y$ (ii) $-2a + 5$ (iii) $-4x^2 + 7x$ (iv) $+4a - 7b$

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

(vi) $11 - by$

7. Sides of a triangle are $= 2x + 3y, x + 5y$ and $7x - 2y$

P = sum of all sides $= 2x + 3y + x + 5y + 7x - 2y$

$= 2x + x + 7x + 3y + 5y - 2y$

$= 10x + 8y - 2y$

$= 10x + 6y$

8. Sides of a rectangle are $6a + 9b$ and $8a - 4b$

So length = $6a+9b$ breadth = $8a-4b$

$P = 2(l+b) = 2(6a+9b+8a-4b)$

$= 2(14a+5b) = 28a+10b$

9. (i) $2a+b-(a+b)$

$= 2a+b-a-b$

$= a$

(ii) $-2b+2c-(b+3c)$

$= -2b+2c-b-3c$

$= -3b-c$

(iii) $5a+b-(-6b+2a)$

$= 5a+b+6b-2a$

$= 3a+7b$

(iv) $(a^3-1+a)-(3a-2a^2)$

$= a^3-1+a-3a+2a^2$

$= a^3+2a^2+a-3a-1$

$= a^3+2a^2-2a-1$

(v) $p+2-1 = p+1$

(vi) $x+2y+z-(-x-y-3z)$

$= x+2y+z+x+y+3z$

$= 2x+y+4z+2y$

(vii) $3a^2-8ab-2b^2-(3a^2-4ab+6b^2)$

$= 3a^2-8ab-2b^2-3a^2+4ab-6b^2$

$3a^2-3a^2-8ab+4ab-2b^2-6b^2-4ab-8b^2$

$= -4ab-8b^2$

(viii) $4pq-6p^2-2q^2-9p^2$

$= 4pq-2q^2-6p^2-9p^2$

$4pq-2q^2-15p^2$

$4pq-15p^2-2q^2$

$= 4pq-15p^2-2q^2$

(ix) $10abc-(2a^2+2abc-4b^2)$

$10abc-2a^2-2abc+4b^2$

$10abc-2abc-2a^2+4b^2$

$= 8abc-2a^2+4b^2$

(x) $a^2+ab+c^2-(a^2-d^2)$

$a^2+ab+c^2-a^2+d^2$

$a^2-a^2+ab+c^2+d^2$

$ab+c^2+d^2$

10 (i) $8-x-(4x)$

$8-x-4x$

$8-5x$

(ii) $c+3d-(-8c)$

$c+3d+8c$

$9c+3d$

(iii) $b+6c-(-5a-2b)$

$6+6c+5a+2b$

$5a+3b+6c$

(iv) $3p^2-8p-(4p+p^2)$

$3p^2-8p-4p-p^2$

$2p^2-12p$

(v) $4a-b-2c-(5a-3b+2c)$

$4a-b-2c-5a+3b-2c$

$-a+2b-4c$

(vi) $xy-yz+xz-(-xy+yz-zx)$

$xy-yz+xz+xy-yz+zx$

$2xy-2yz+2zx$

$2(xy-yz+zx)$

(vii) $3x^2-5xy+3y^2-(2x^2-7xy-y^2)$

$3x^2-5xy+3y^2-2x^2+7xy+y^2$

$3x^2-2x^2+7xy-5xy+3y^2+y^2$

$x^2+2xy+4y^2$

(viii) $2b^2-a^2+2ab-(a^2-3ab-6b^2)$

$2b^2-a^2+2ab-a^2+3ab+6b^2$

$-a^2-a^2+2b^2+6b^2+2ab+3ab$

$-2a^2+8b^2+5ab$

(ix) $-3y^2+5xy^2-7x^2-9x^2y-(4x^2-5x^2y+y^2)$

$-3y^2+5xy^2-7x^2-9x^2y-4x^2+5x^2y-y^2$

$-3y^2-y^2+5xy^2-7x^2-4x^2-9x^2y+5x^2y$

$-4y^2+5xy^2-11x^2-4x^2y$

x $3m^3+4-(6m^3+4m^2+7m-3)$

$3m^3+4-6m^3-4m^2-7m+3$

$3m^3-6m^3-4m^2-7m+3+4$

$-3m^3-4m^2-7m+7$