

**I-)**

1)  $A = (2x + 3)^2 = 4x^2 + 12x + 9$

2)  $B = (3x - 5)(3x + 5) + (5x - 3)^2 = 9x^2 - 25 + 25x^2 - 30x + 9$   
 $= 34x^2 - 30x - 16$

3)  $C = (3x - 4)(5x + 7) - (2x + 3)(6x - 1)$   
 $= 15x^2 + 21x - 20x - 28 - 12x^2 + 2x + 18x - 3 = 3x^2 + 21x - 31$

**II -)**  $202^2 = (200+2)^2 = 200^2+800+2^2 = 40\ 000+800+4 = 40804$

$304 \times 296 = (300+4)(300-4) = 300^2 - 4^2 = 90\ 000 - 16 = 89\ 984$

$199\ 998^2 = (200\ 000 - 2)^2 = 40\ 000\ 000\ 000 - 800\ 000 + 4 = 39\ 999\ 200\ 004$

**III -)**

1)  $D = (2\sqrt{3} + 5)(2\sqrt{3} - 5) - (3\sqrt{3} - 5)^2$   
 $= 12 - 25 - 27 + 30\sqrt{3} - 25 = -65 + 30\sqrt{3}$

2)  $E = (2\sqrt{5} - 3\sqrt{2})(5\sqrt{5} + 2\sqrt{2}) + (3\sqrt{5} + 2\sqrt{2})^2$   
 $= 50 + 4\sqrt{10} - 15\sqrt{10} - 12 + 45 + 12\sqrt{10} + 8 = 91 + \sqrt{10}$