ALGEBRA: Multiplying out brackets 2

Examples:

(1) $(7x + 2)(3x + 5)$

$= 21x^2 + 35x + 6x + 10$

$= 21x^2 + 41x + 10$

(2) $7x(2x + 1) + (3x + 2)(x + 5)$

$7x(2x + 1) + (3x + 2)(x + 5)$

$= 14x^2 + 7x + 3x^2 + 15x + 2x + 10$

$= 17x^2 + 24x + 10$

(3) $6(x + 3)(2x + 5)$

$6(x + 3)(2x + 5)$

$= 6(2x^2 + 5x + 6x + 15)$

$= 6(2x^2 + 11x + 15)$

$= 12x^2 + 66x + 90$

(4) $2x(x + 3)(5x + 1)$

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

$= (2x)(5x^2 + x + 15x + 3)$

$= (2x)(5x^2 + 16x + 3)$

$= 10x^3 + 32x^2 + 6x$

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

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

$= (2x)(x^2 + 2x + x + 2) + 3(10x^2 + 15x + 2x + 3)$

$= (2x)(x^2 + 3x + 2) + 3(10x^2 + 17x + 3)$

$= 2x^3 + 6x^2 + 4x + 30x^2 + 51x + 9$

$= 2x^3 + 36x^2 + 55x + 9$

Exercises:

(6) $(x+7)(3x+2)$

(7) $(2x-3)(4x+5)$

(8) $(3+4x)(2x+7)$

(9) $(3x-2)(4x-1)$

(10) $7(x+1)+(3x+7)(x+5)$

(11) $(-2)(x+1)+(x+7)(2x+3)$

(12) $3(2x-5)-(x+1)(2x+3)$

(13) $(2x-3)(3x-1)-4(5-2x)$

(14) $3x(2x+2)+(x+2)(x+5)$

(15) $7x(2x-2)+(4x+2)(x-5)$

(16) $3(x-4)-x(3x+2)(x+4)$

(17) $11x(2x+1)-(x-2)(5x-2)$

(18) $2(x-4)(4x+3)-3x(3-2x)(x+1)$

(19) $x+3(2-7x)$

(20) $(x+1)(x+2)(x+3)$

Be REALLY careful of signs!!

Some of these look hard, but just take your time, follow the rules, and take care!