Introduction to Brackets

Part 1: Expand the following brackets

$3(x+2)$	$4(x+7)$	$5(x+11)$
$12(x+3)$	$11(3+x)$	$5(a+b)$

Part 2: Expand the following brackets

$3(x-4)$	$5(x-2)$	$7(x-11)$
$4(x-8)$	$12(x-3)$	$7(x-y)$

Part 3: Expand the following brackets

$4(2x+3)$	$5(3x+7)$	$2(5x+1)$
$11(3x+2)$	$7(3x-5)$	$11(2x-9)$
$3(4-5x)$	$7(8-2x)$	$5(3x-4y)$
$-2(x+7)$	$-5(2x-7)$	$-4(5-9x)$

Extension: Expand and simplify the following brackets

$5+3(2x+1)$	$7(3x+2)+7x$	$4(3x+2)-5$
$3(x+3)+3(x+1)$	$5(2x+3)-11x$	$5-3(2x-7)$
$4(2x-3)+3(2x-1)$	$4(x-5)-3(x-2)$	$7x+3(2x-4)-11$

Expand the following brackets

Part 1:

$x(x+5)$	$x(x+7)$	$x(x+9)$
$x(x+11)$	$b(b+3)$	$d(4+d)$

Part 2:

$x(x-4)$	$b(b-7)$	$c(c-11)$
$x(x+9)$	$b(11-b)$	$x(x-y)$

Part 3:

$3x(x+2)$	$5x(x+9)$	$7c(c+2)$
$4c(c-8)$	$5x(x-2)$	$7x(4-x)$

Part 4:

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

Extension: Expand and simplify the following

$4x+4x(2x+1)$	$3x+2x(3x+1)$
$3x(2x+5)+7x^2$	$4+5x(3x-2)$
$7x(3x+2)+3x(9x+7)$	$3x(2x+9)+7x(3x-2)$
$4x(3x-9)+2x(7x-3)$	$5x(3x+2)-3x(10-9)$

Solve the following equations

Fundamental Equations

Part 1:

Find the solutions to the following equations

$x + 5 = 11$	$x + 2 = 13$	$a - 7 = 11$	$b - 2 = 12$
$x + 22 = 55$	$10 - x = 5$	$a + a = 8$	$x - 10 = -2$
$3x = 33$	$2x = 20$	$5x = 40$	$2x = 7$
$10x = 5$	$11x = 110$	$17x = 34$	$0.5x = 5$

Extension 1: Think of as many simple equations you can which have a solution of:
$x = 4$

Extension 2: Find the solution to the following equations

$x + 5 = 2$	$x - 3 = -1$	$x + 4 = -7$	$5 - x = 8$
$b + 7 = -2$	$b + b = -6$	$4 - b = -11$	$8 = x + 9$

Extension 3: Think of as many simple equations you can which have a solution of:
$x = -2$

Part 2:

Find the solutions to the following equations

$3x + 2 = 11$	$5x + 2 = 22$	$5 + 7x = 19$	$3x - 5 = 10$
$11x - 3 = 30$	$2x + 1 = 201$	$4 = 2x + 2$	$2x + 2 = 3$
$4a - 10 = 30$	$8x + 2 = 58$	$4x = 4$	$2 = 5x + 12$
$3a + 1 = 10$	$5b + 2 = 32$	$7c - 11 = 10$	$x + x + x = 2 + x$

Extension: For each of the following solutions think of a matching EASY AND DIFFICULT EQUATION

$x = 3$	$x = 7$	$x = 2$	$x = 0.25$	$x = -1$