National 5 & Int. 2   Brackets
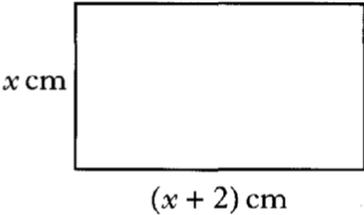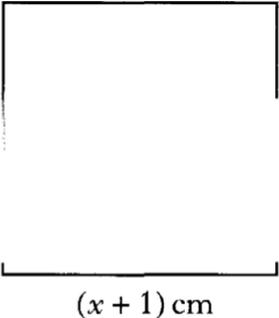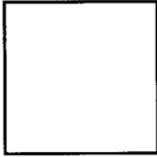
2018 P1 Q2	Expand and simplify $(3x+1)(x-1)+2(x^2-5)$.	3
Ans	$5x^2 - 2x - 11$	
2017 P1 Q4	Expand and simplify $(2x+3)(x^2-4x+1)$.	3
Ans	$2x^3 - 5x^2 - 10x + 3$	
2015 P1 Q4	Multiply out the brackets and collect like terms $$(x-4)(x^2+x-2).$$	3
Ans	$x^3 - 3x^2 - 6x + 8$	
2015 P1 Q1	Multiply out the brackets and collect like terms. $$(2x + 6)(5x - 3) + 9x$$	3
Ans	$10x^2 + 33x - 18$	
2014 P1 Q2	Multiply out the brackets and collect like terms: $$(2x-5)(3x+1).$$	2
Ans	$6x^2 - 13x - 5$	
2014 P1 Q2	Multiply out the brackets and collect like terms. $$(3x + 2)(x - 5) + 8x$$	3
Ans	$3x^2 - 5x - 10$	
2013 P2 Q1	Multiply out the brackets and collect like terms. $$(x + 2)(x - 5) - 9x$$	3
Ans	$x^2 - 12x - 10$	
2012 P2 Q2	Multiply out the brackets and collect like terms. $$(3x - 5)(x^2 + 2x - 6)$$	3
Ans	$3x^3 + x^2 - 28x + 30$	

	Multiply out the brackets and collect like terms. $$5x + (3x + 2)(2x - 7)$$	3
2011 P1 Q2		
Ans	$6x^2 - 12x - 14$	
2010 P1 Q4b	Multiply out the brackets and collect like terms. $$(3x + 2)(x^2 + 5x - 1)$$	3
Ans	$3x^3 + 17x^2 + 7x - 2$	
2009 P1 Q4	Multiply out the brackets and collect like terms. $$(x + 5)(2x^2 - 3x - 1)$$	3
Ans	$2x^3 + 7x^2 - 16x - 5$	
2008 P1 Q2	Multiply out the brackets and collect like terms. $$(3x + 2)(x - 5) + 8x$$	3
Ans	$3x^2 - 5x - 10$	
2007 P1 Q5	Multiply out the brackets and collect like terms. $$(x + 3)(x^2 + 4x - 12)$$	3
Ans	$x^3 + 7x^2 - 36$	
2006 P1 Q2	Multiply out the brackets and collect like terms. $$(2y - 3)(y^2 + 4y - 1)$$	3
Ans	$2y^3 + 5y^2 - 14y + 3$	
2005 P1 Q3a	Multiply out the brackets and collect like terms. $$(4x + 2)(x - 5) + 3x$$	3
Ans	$4x^2 - 15x - 10$	

	A rectangle has length $(x + 2)$ centimetres and breadth x centimetres. x cm $(x + 2)$ cm (*a*) Write down an expression for the area of the rectangle. A square has length $(x + 1)$ centimetres. $(x + 1)$ cm (*b*) The area of the square above is greater than the area of the rectangle. By how much is it greater?	1 2
Ans	(*a*) $x(x+2)$ (*b*) $1cm^2$	
	Multiply out the brackets and collect like terms. $$5x + (x - 4)(3x + 1)$$	3
Ans	$3x^2 - 6x - 4$	
	Multiply out the brackets and collect like terms. $$(2a - b)(3a + 2b)$$	2
Ans	$6a^2 + ab - 2b^2$	
	(*a*) Multiply out the brackets and collect like terms. $$(2x + 3)(x^2 - 5x + 2)$$	3
Ans	$2x^3 - 7x^2 - 11x + 6$	
	Multiply out the brackets and collect like terms. $$(x - 3)(x^2 + 4x - 1)$$	3
Ans	$x^3 + x^2 - 13x + 3$	

The square and rectangle shown below have the same **perimeter**.

$(2x + 2)$ cm

$(x + 3)$ cm

length

Show that the length of the rectangle is $(3x + 1)$ centimetres.

2

Ans	*Proof*

Multiply out the brackets and collect like terms.

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

3

Ans	$2x^3 + 11x^2 + 11x - 4$