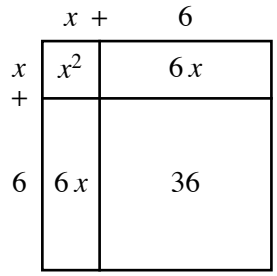
Squares and Expansions

You can square the expression $(x + 6)^2$ to get the **equivalent expression** $x^2 + 12x + 36$. Now you will go in the other direction. This reverse process is called **completing the square**.



1. Find the number you must add to each given expression so the result is a perfect square. Write the result in the form $(x - h)^2$. Draw an area model to illustrate your thinking.

	Expression	**Add**	**Result in form** $(x - h)^2$
a.	$x^2 - 6x$		
b.	$x^2 - 5x$		
c.	$x^2 + 10x$		
d.	$x^2 - 4x$		
e.	$x^2 + 14x$		

2. Write each expression without parentheses. Show your work in the space below.

a.	$-(x-6)^2+10$	
b.	$(x-2)^2+5$	
c.	$-(x-1)^2+8$	
d.	$(x+3)^2-4$	

3. Sketch the graph of the function $y = -(x-5)^2+10$. Explain how you used the algebraic representation of the function to make your sketch.