Chapter 2 More About Quadratic Equations

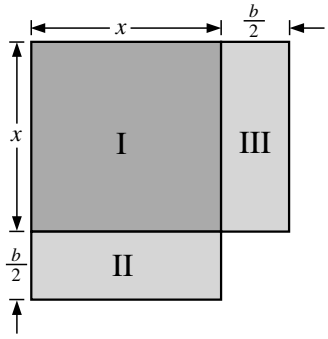
Class Activity 1

Suppose $x + bx + c = (x + p)^2$.

1. Copy and complete the following table.

p	$(x + p)^2$	$x^2 + bx + c$	b	c
5	$(x + 5)^2$	$x^2 + 10x + 25$	10	25
3	$(x + 3)^2$	$x^2 + 6x + 9$	6	9
–7	$(x - 7)^2$	$x^2 - 14x + 49$	–14	49
$-\frac{1}{2}$	$\left(x - \frac{1}{2}\right)^2$	$x^2 - x + \frac{1}{4}$	–1	$\frac{1}{4}$
1	$(x + 1)^2$	$x^2 + 2x + 1$	2	1
–2	$(x - 2)^2$	$x^2 - 4x + 4$	–4	4
6	$(x + 6)^2$	$x^2 + 12x + 36$	12	36
–4	$(x - 4)^2$	$x^2 - 8x + 16$	–8	16
$\frac{3}{2}$	$\left(x + \frac{3}{2}\right)^2$	$x^2 + 3x + \frac{9}{4}$	3	$\frac{9}{4}$
$-\frac{5}{2}$	$\left(x - \frac{5}{2}\right)^2$	$x^2 - 5x + \frac{25}{4}$	–5	$\frac{25}{4}$

2. The figure is made up of a square and two identical rectangles.



(a) Find Area I + Area II + Area III.

$= x^2 + \frac{b}{2}(x) + \frac{b}{2}(x)$

$= x^2 + bx$

(b) To make the figure a square, what shape should be added to it?

A square of area $\left(\frac{b}{2}\right)^2$.

3. What is the area of the shape obtained in **2(b)**?

$x^2 + bx + \left(\frac{b}{2}\right)^2$