



# Working with Signed Numbers

Let's work with signed numbers.

## 9.1

## Worked Example: Multiplying Rectangles

Solve  $14 \cdot 8$  using a diagram.

Step 1:

	10	4
10		
-2		

Step 2:

	10	4
10	100	40
-2	-20	-8

Step 3:

$$100 + 40 - 20 - 8 = 112$$

## 9.2

## Expanded Form

For each expression given in factored form, write two equivalent expressions in expanded form. If you get stuck, draw a diagram to represent the product. Some blank diagrams are provided—draw additional diagrams as needed.

1.  $(30 + 3)(30 - 2)$

2.  $(20 - 1)(20 - 1)$

3.  $(100 + 5)(100 - m)$

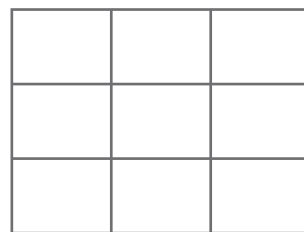
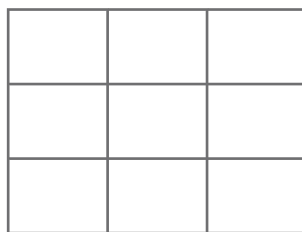
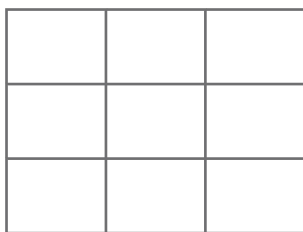
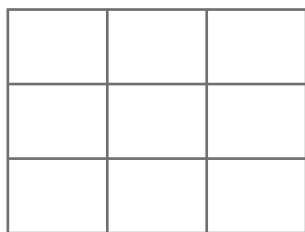
4.  $(40 - a)(40 + b)$

5.  $y(11 - y)$

6.  $-7(3a - 1)$

7.  $\frac{1}{4}(-8a + 12a)$

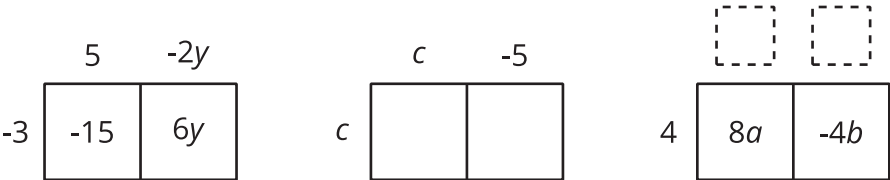
8.  $-x(3x - 5)$



9.3

Factoring and Expanding

In each row, write the equivalent expression. If you get stuck, use a diagram to organize your work. The first row is provided as an example. Diagrams are provided for the first three rows.



factored	expanded
-3(5 - 2y)	-15 + 6y
c(c - 5)	
	8a - 4b
-3(2w - 7z)	
-(3y - 2x)	
	12x - 14x <sup>2</sup>
n(3 - 10)	
	5y - 7y
-5x(y - 2z)	
	tw - tv - 5tz
-a(2b - 4c + a)	