PREALGEBRA 2E

Chapter 3 INTEGERS

PowerPoint Image Slideshow

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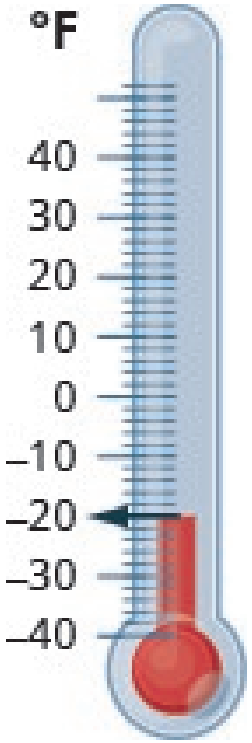
FIGURE 3.1

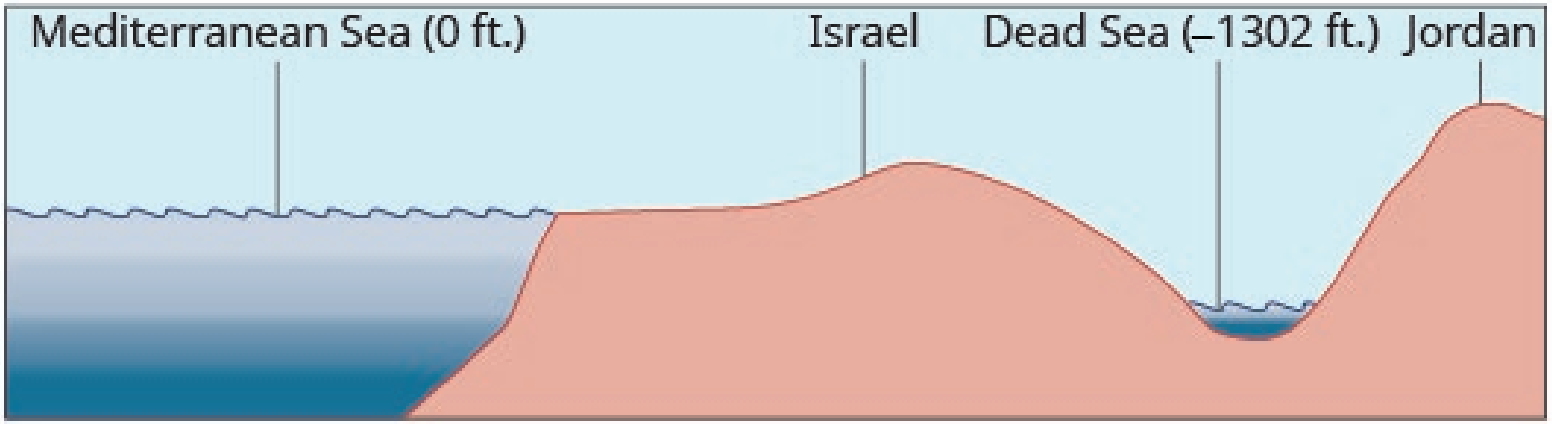
The peak of Mount Everest. (credit: Gunther Hagleitner, Flickr)

FIGURE 3.2



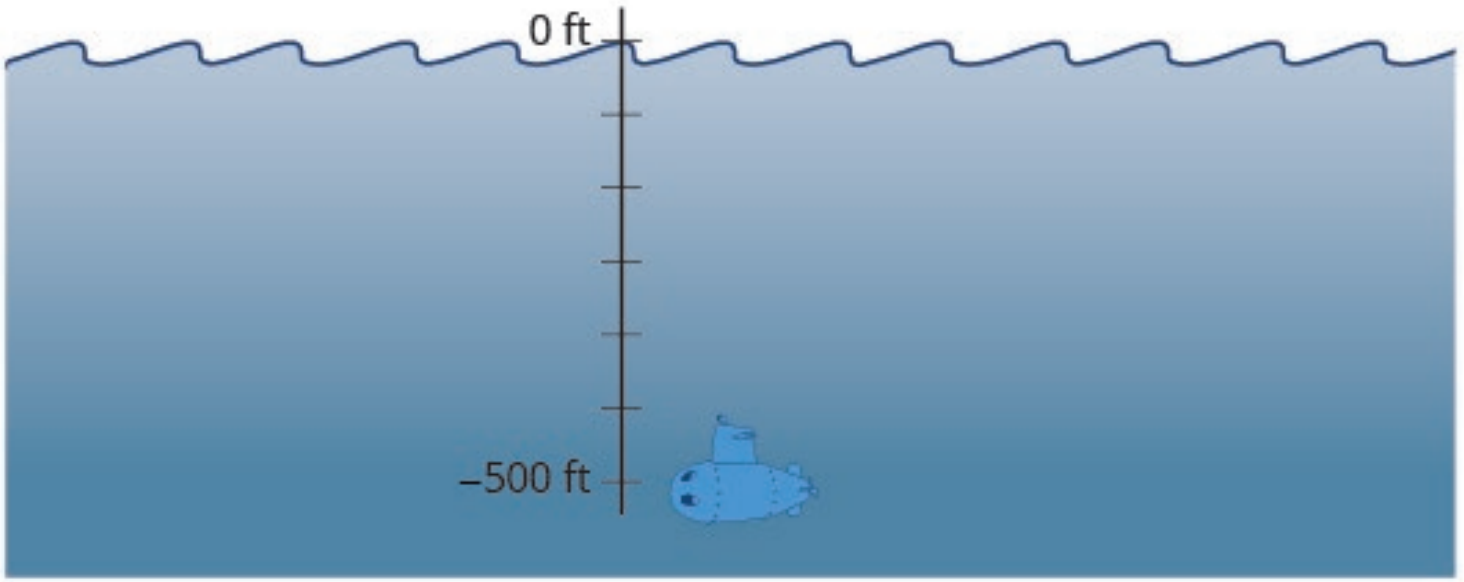
Temperatures below zero are described by negative numbers.

FIGURE 3.3



The surface of the Mediterranean Sea has an elevation of 0 ft. The diagram shows that nearby mountains have higher (positive) elevations whereas the Dead Sea has a lower (negative) elevation.

FIGURE 3.4



Depths below sea level are described by negative numbers. A submarine 500 ft below sea level is at −500 ft.

FIGURE 3.5

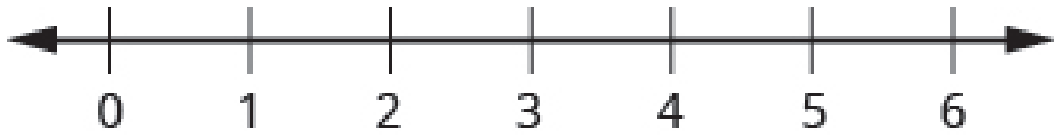
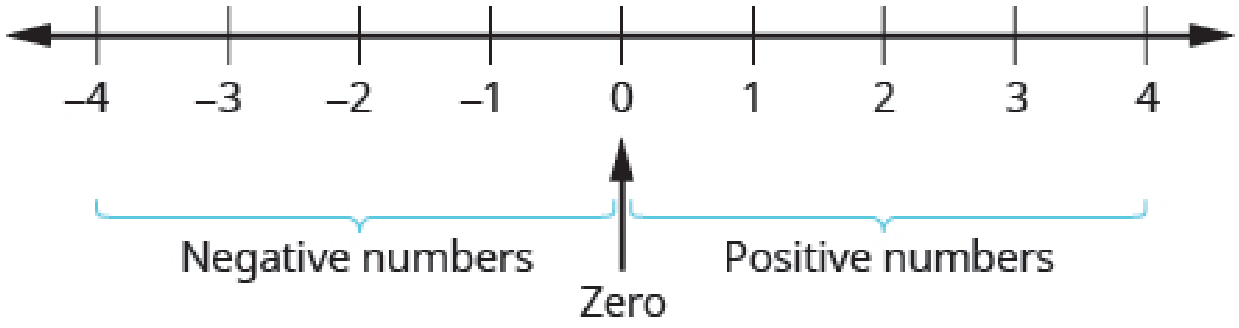


FIGURE 3.6



On a number line, positive numbers are to the right of zero. Negative numbers are to the left of zero. What about zero? Zero is neither positive nor negative.

FIGURE 3.10

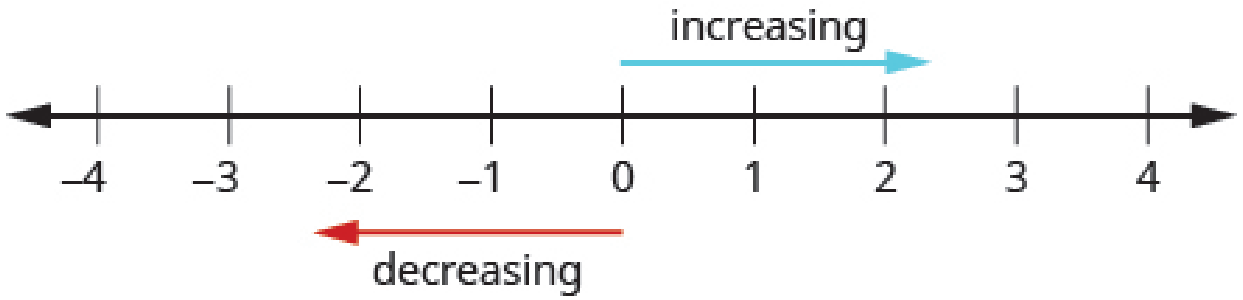
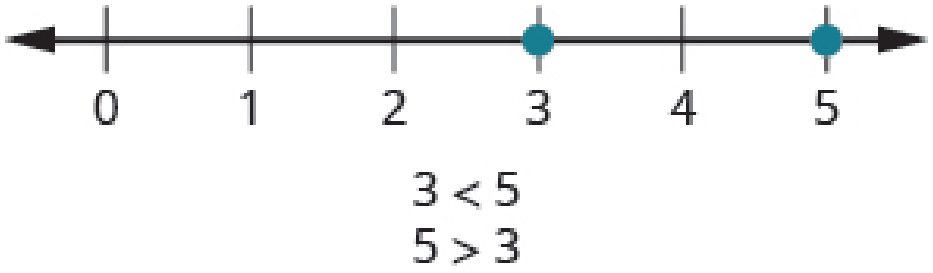
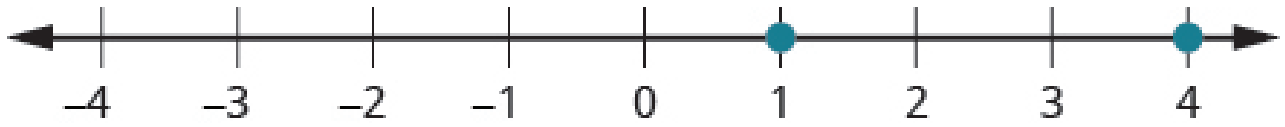
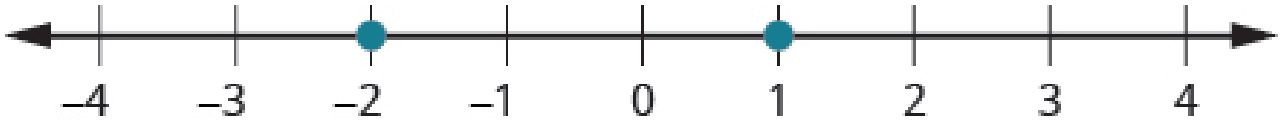


FIGURE 3.11



The number 3 is to the left of 5 on the number line. So 3 is less than 5, and 5 is greater than 3.


–4
–3
–2
–1
0
1
2
3
4


–4
–3
–2
–1
0
1
2
3
4

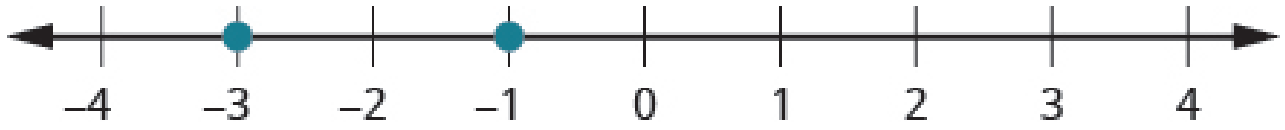
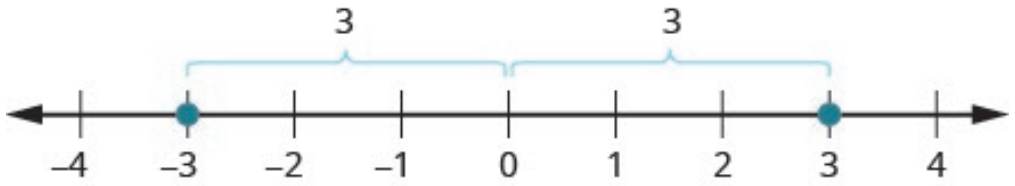

–4
–3
–2
–1
0
1
2
3
4

FIGURE 3.13

The numbers –2 and 2 are opposites.

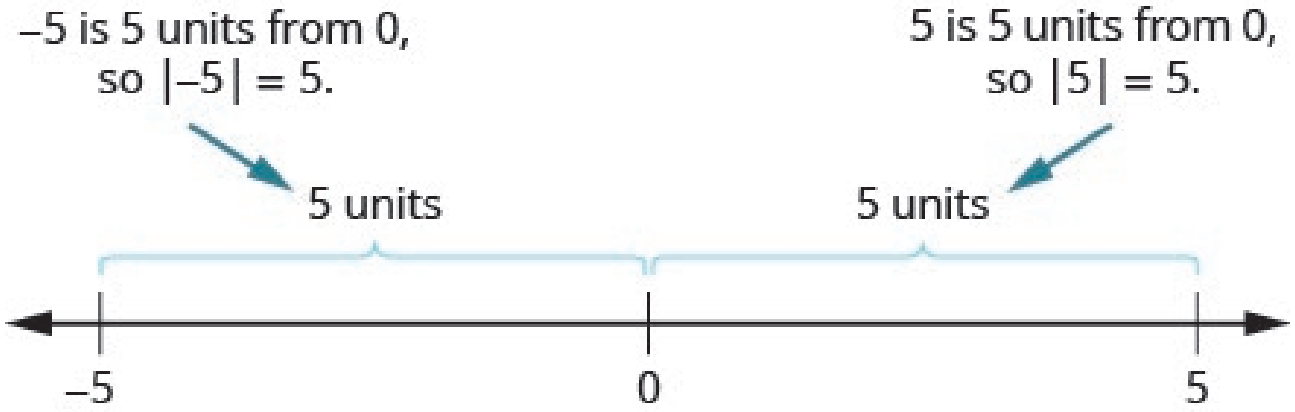
(a)



The numbers –3 and 3 are opposites.

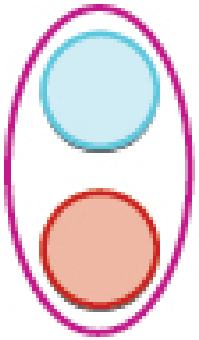
(b)

FIGURE 3.16


–5 is 5 units from 0,
so |–5| = 5.
5 is 5 units from 0,
so |5| = 5.
5 units
5 units
–5
0
5

positive
negative

FIGURE 3.17



$1 + (-1) = 0$

A blue counter represents $+1$. A red counter represents -1. Together they add to zero.

$5 - 3 = 2$

$-5 - (-3) = -2$

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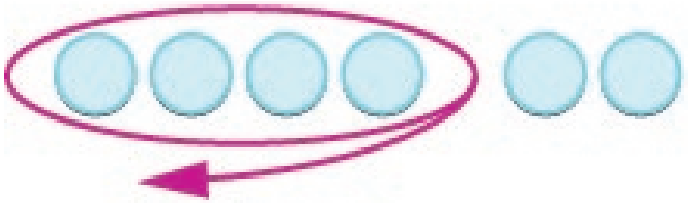
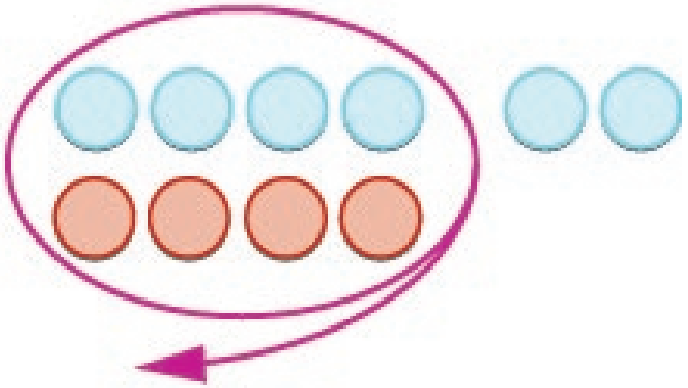
$6 - 4$



2

$6 + (-4)$



2

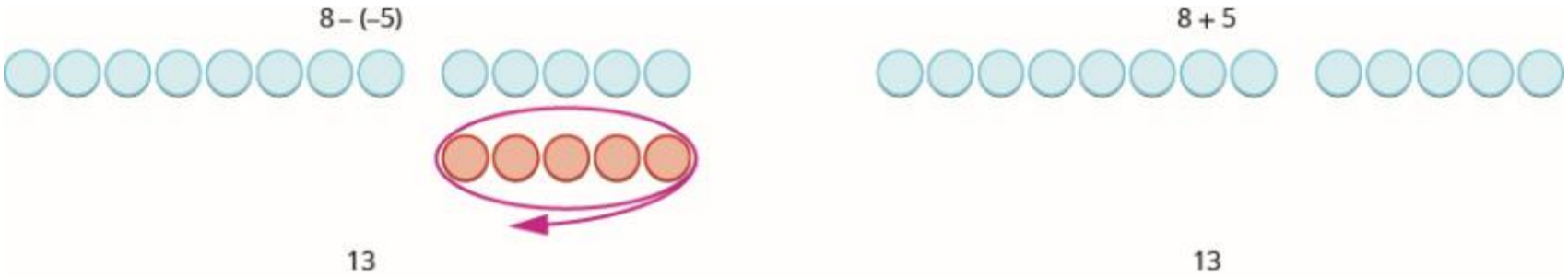

8 – (–5)
13
8 + 5
13

FIGURE 3.18

$a - b$
a minus b
the difference of a and b
subtract b from a
b subtracted from a
b less than a

FIGURE 3.19

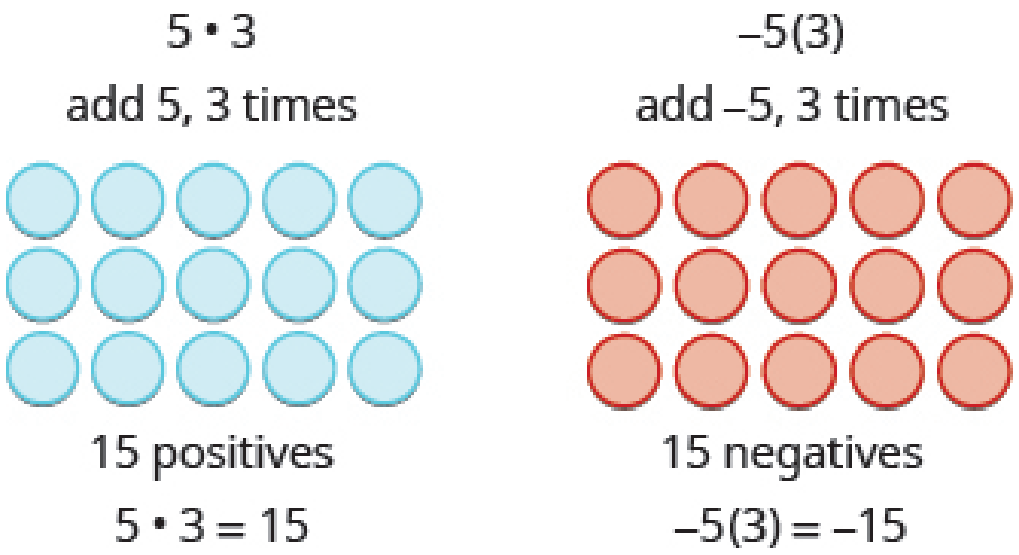
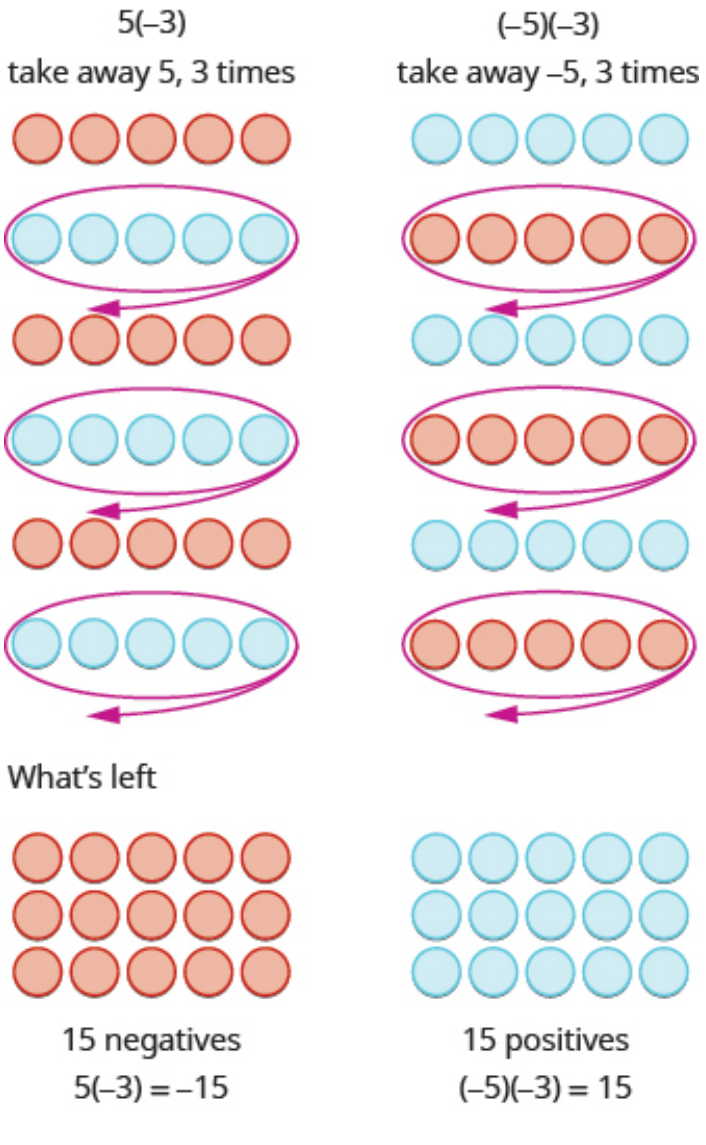

5 • 3
add 5, 3 times
15 positives
5 • 3 = 15
–5(3)
add –5, 3 times
15 negatives
–5(3) = –15

FIGURE 3.20


5(–3)
take away 5, 3 times
(–5)(–3)
take away –5, 3 times
What's left
15 negatives
5(–3) = –15
15 positives
(–5)(–3) = 15

$$x + 4 = 12$$

$$x + 4 - 4 = 12 - 4$$

$$x = 8$$

$$y - 5 = 9$$

$$y - 5 + 5 = 9 + 5$$

$$y = 14$$

FIGURE 3.21

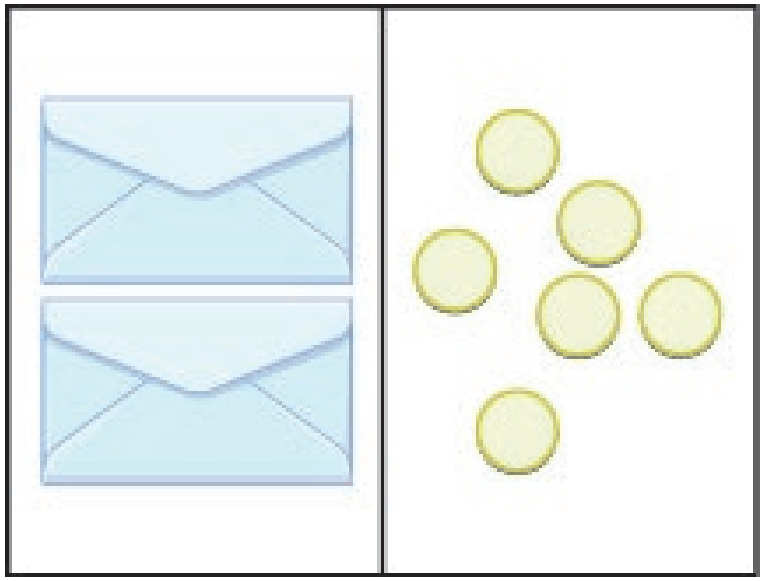
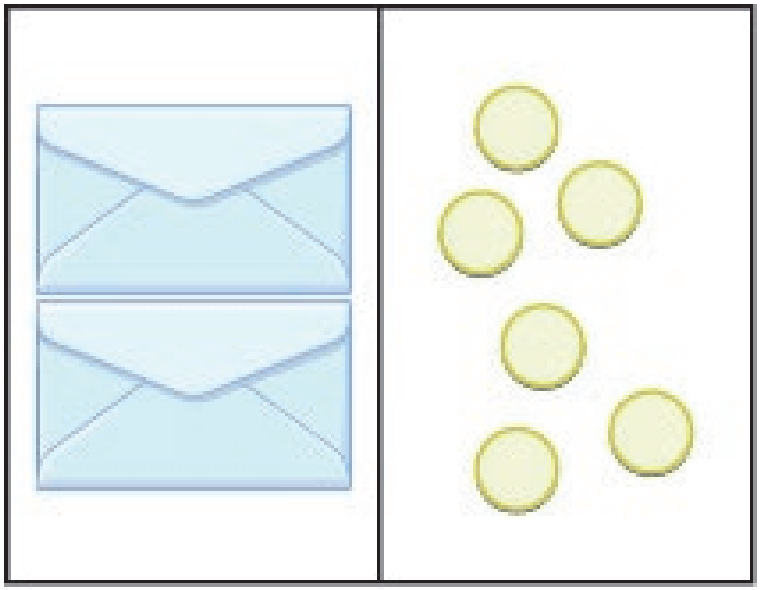


FIGURE 3.22

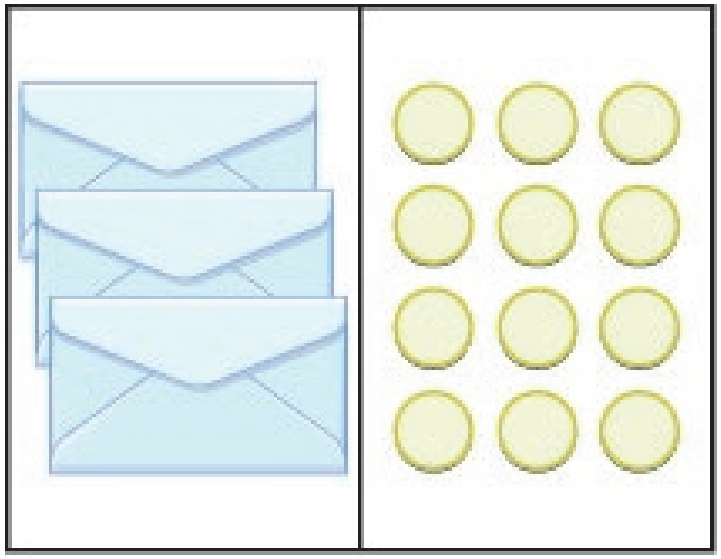


$2x = 6$

$$\frac{2x}{2} = \frac{6}{2}$$

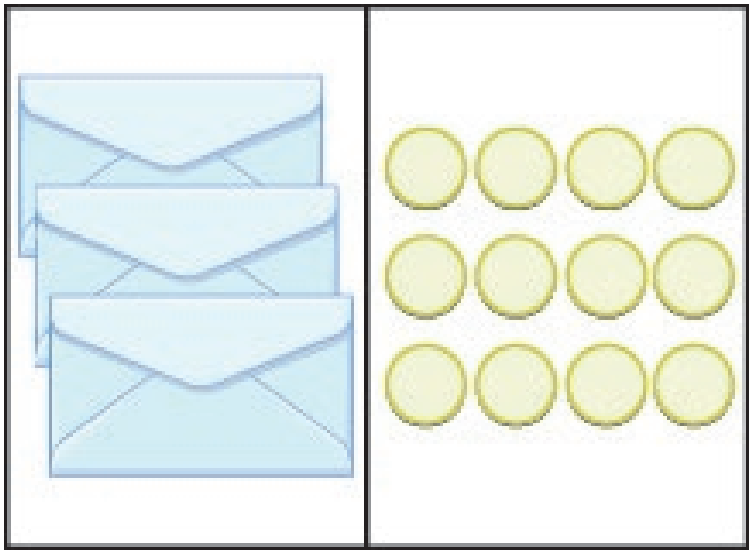
$$x = 3$$

FIGURE 3.23



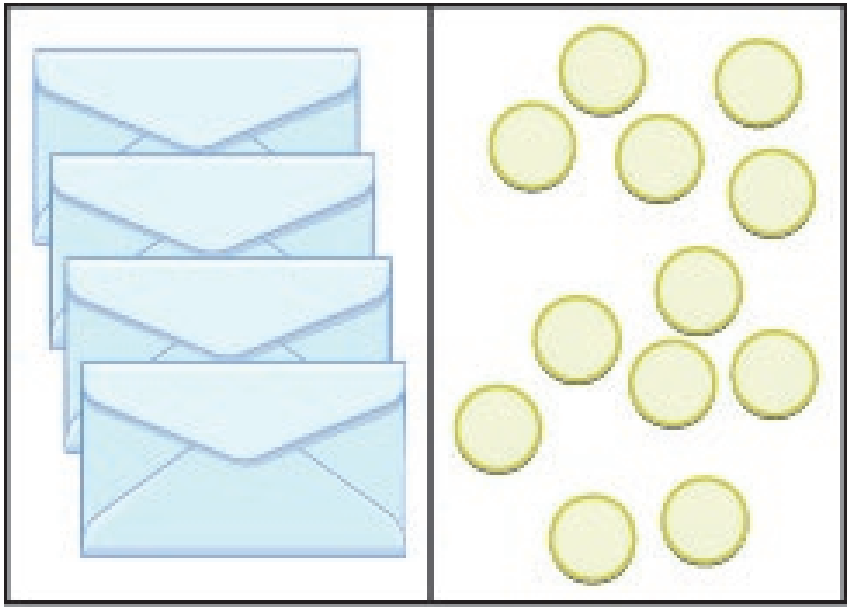
$3x = 12$

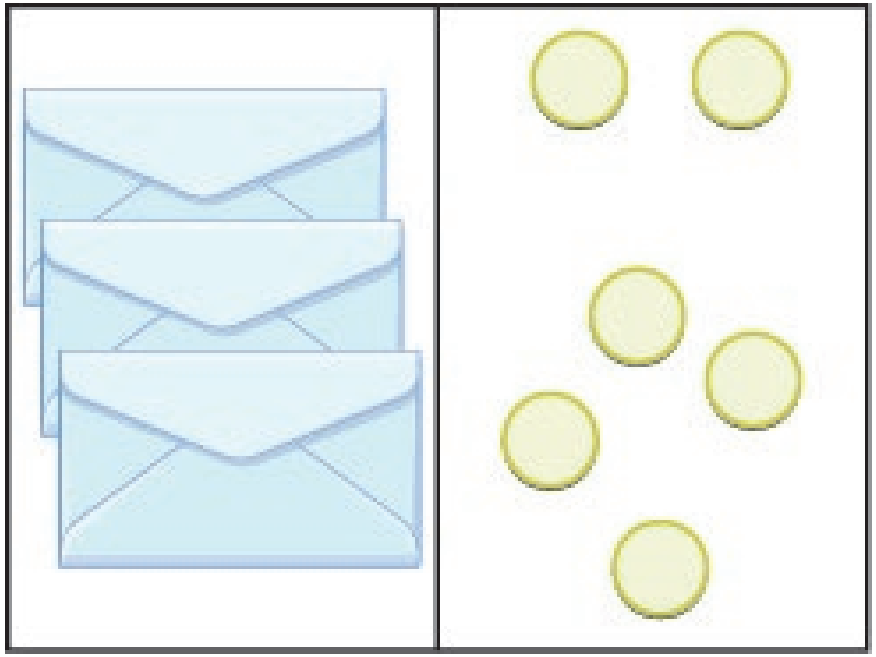
FIGURE 3.24



$$\frac{3x}{3} = \frac{12}{3}$$

$$x = 4$$





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