INTERMEDIATE ALGEBRA

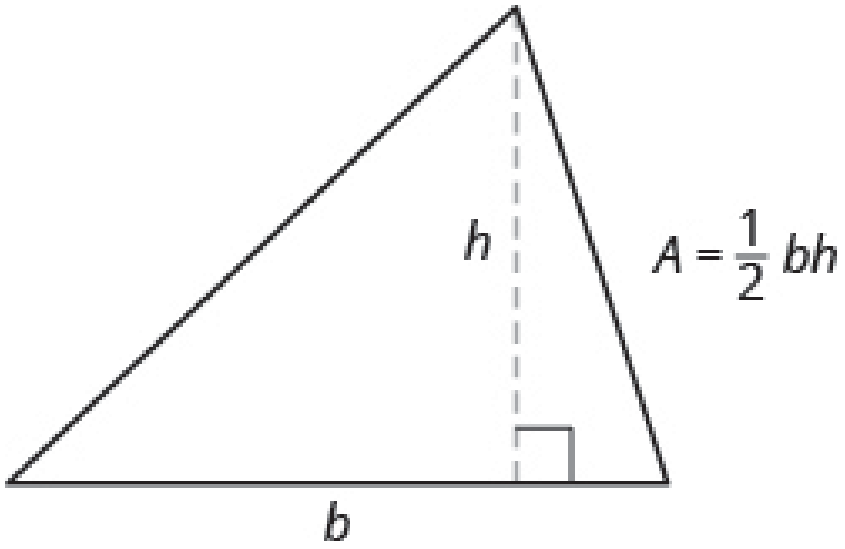
Chapter 2 SOLVING LINEAR EQUATIONS

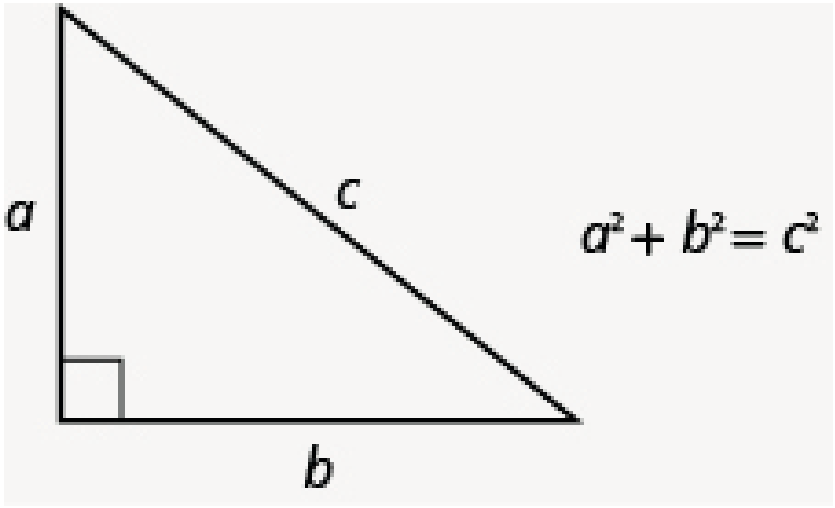
PowerPoint Image Slideshow

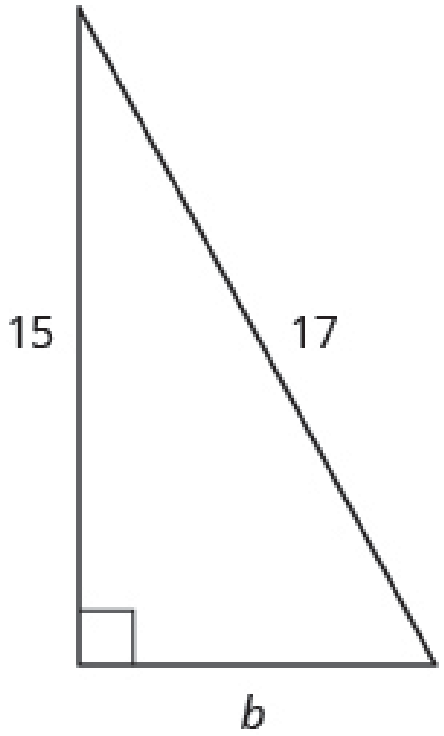
openstax™

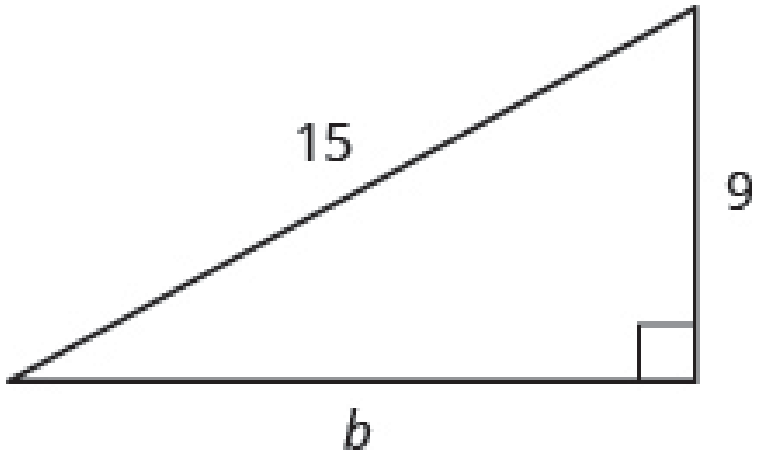
FIGURE 2.1

This drone is flying high in the sky while its pilot remains safely on the ground. (credit: “Unsplash” / Pixabay)

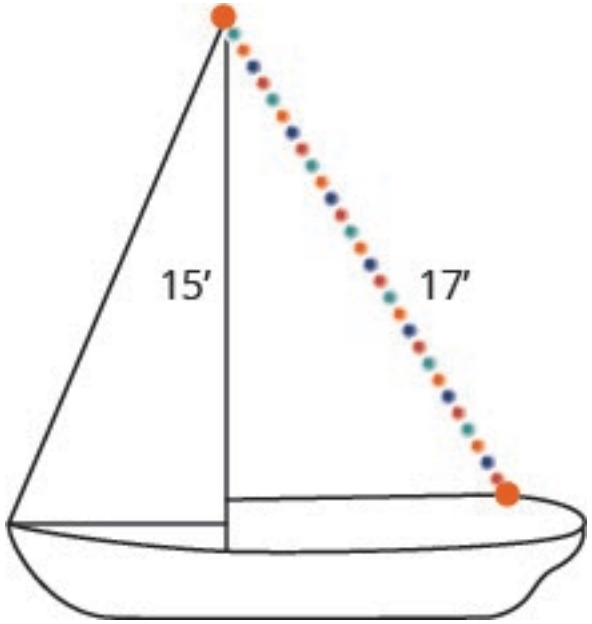

h
b
$A = \frac{1}{2}bh$


a
c
b
$a^2 + b^2 = c^2$


15
17
b


15
9
b


13′
5′

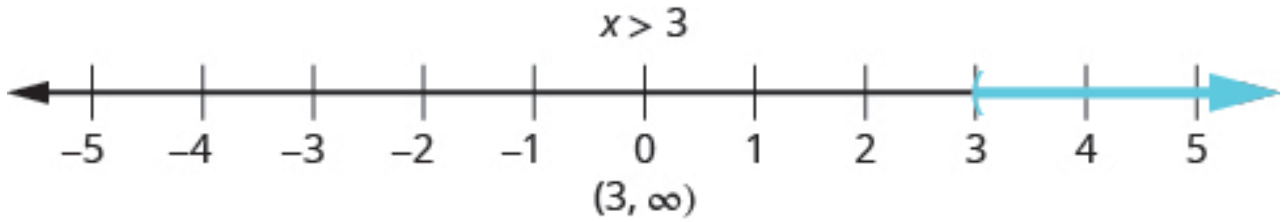

15′
17′

Type	Number • Value ($) =	Total Value ($)

Child tickets	Adult tickets
20	80
45	55
75	25
x	$100 - x$

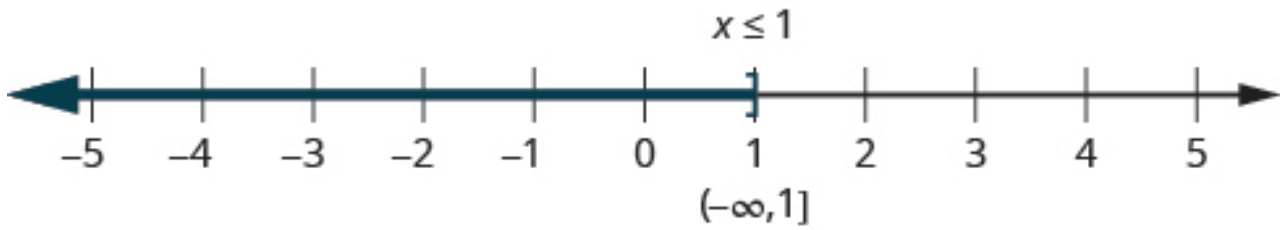
	Rate • Time = Distance		

FIGURE 2.2



The inequality $x > 3$ is graphed on this number line and written in interval notation.

FIGURE 2.3



The inequality $x \leq 1$ is graphed on this number line and written in interval notation.

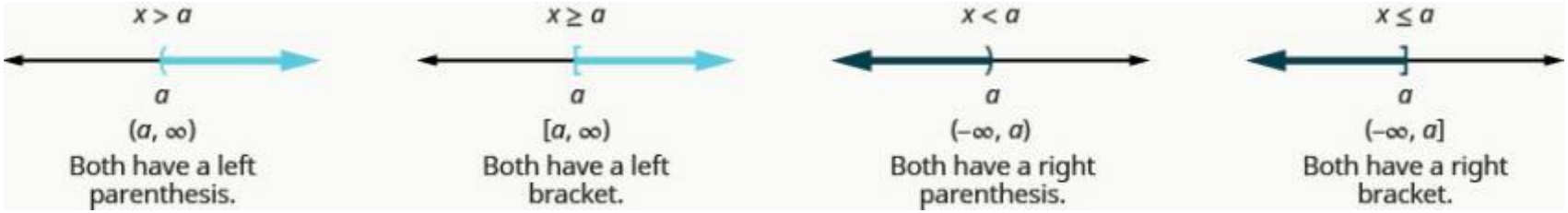

$x > a$
a
(a, ∞)
Both have a left parenthesis.
$x \geq a$
a
$[a, \infty)$
Both have a left bracket.
$x < a$
a
$(-\infty, a)$
Both have a right parenthesis.
$x \leq a$
a
$(-\infty, a]$
Both have a right bracket.

FIGURE 2.4

The interval notation would be (2, 5).

$$-4 < 2$$

$$-4 - 5 < 2 - 5$$

$$-9 < -3 \text{ True}$$

$$-4 < 2$$

$$-4 + 7 < 2 + 7$$

$$3 < 9 \text{ True}$$

$$10 < 15$$

$$10(5) < 15(5)$$

$$50 < 75 \text{ True}$$

$$10 < 15$$

$$\frac{10}{5} < \frac{15}{5}$$

$$2 < 3 \text{ True}$$

$$10 < 15$$

$$10(-5) \;?\; 15(-5)$$

$$-50 \;?\; -75$$

$$-50 > -75$$

$$10 < 15$$

$$\frac{10}{-5} \;?\; \frac{15}{-5}$$

$$-2 \;?\; -3$$

$$-2 > -3$$

FIGURE 2.5

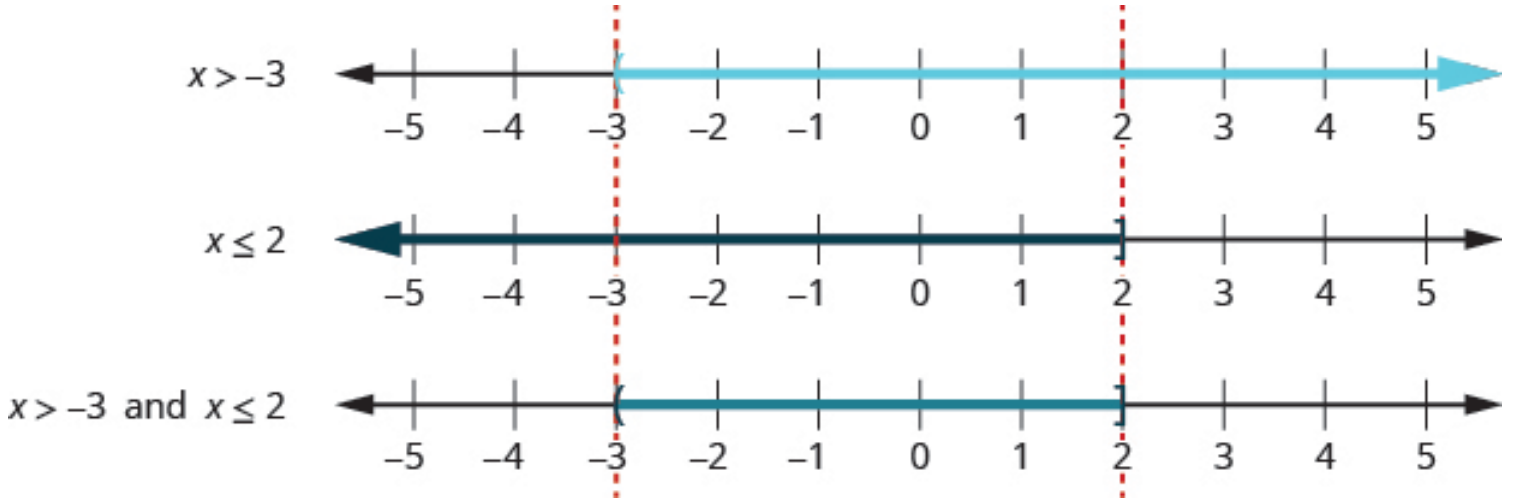
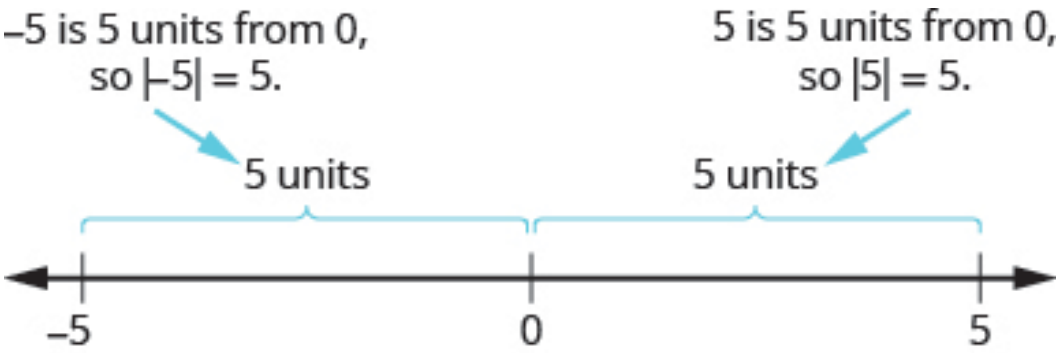
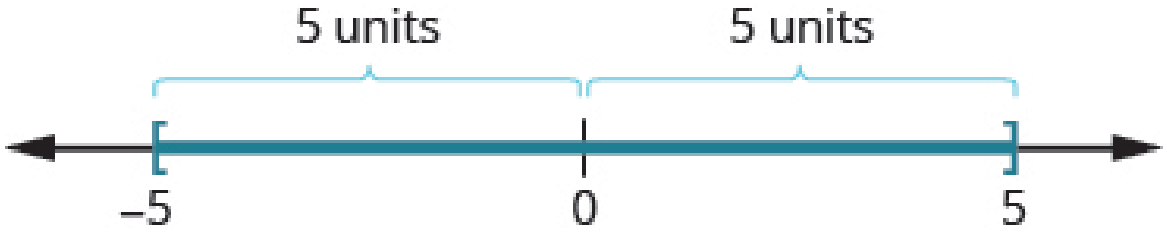


FIGURE 2.6



The numbers 5 and −5 are both five units away from zero.

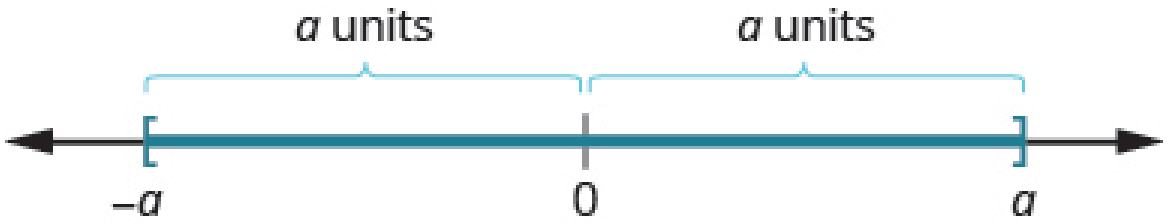
FIGURE 2.7



if $|x| \leq 5$

then $-5 \leq x \leq 5$

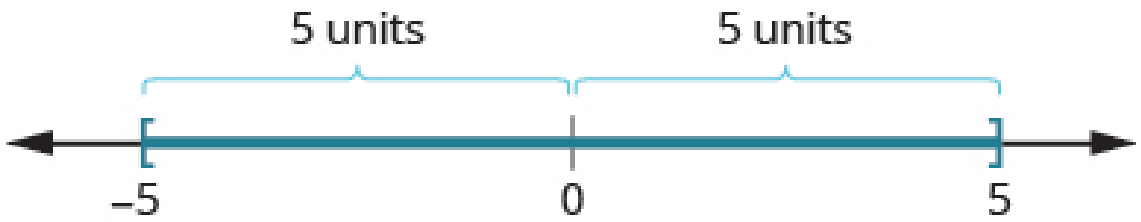
FIGURE 2.8



$$|u| \leq a$$

$$-a \leq u \leq a$$

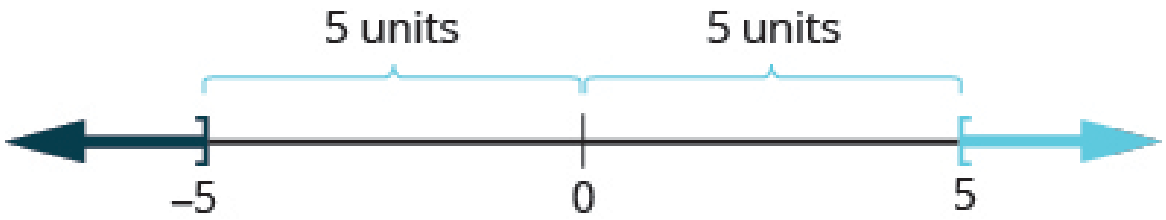
FIGURE 2.9



$$|x| \leq 5$$

$$-5 \leq x \leq 5$$

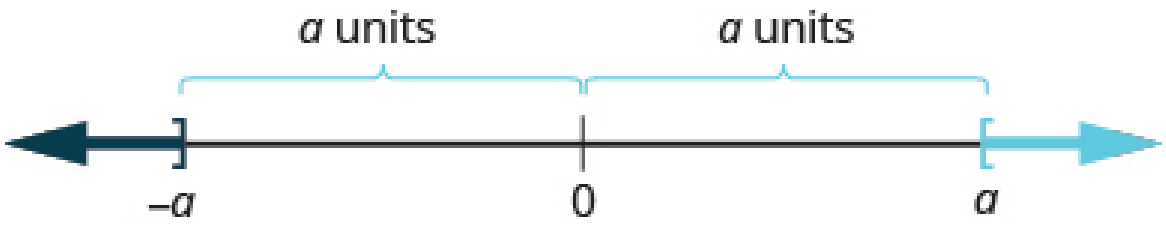
FIGURE 2.10



$|x| \geq 5$

$x \leq -5$ or $x \geq 5$

FIGURE 2.11



$$|u| \geq a$$

$$u \leq -a \quad \text{or} \quad u \geq a$$