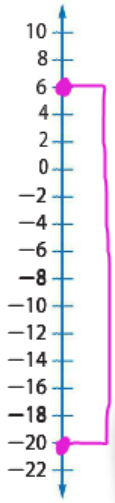
2.3 Goal: Students will be able to subtract integers.

ISG p. 33

Real-World Link

Ants Ant colonies can be found both above and below ground. Most colonies build their nests below ground, where they can dig to 20 feet below the surface. Other ant colonies build above ground nests that can sometimes reach 6 feet tall.



1. What integer would you use to represent *20 feet below the surface*? Explain your reasoning. −20

2. What integer would you use to represent *6 feet tall*? Explain. 6

3. Graph the integers that you wrote in Exercises 1 and 2 on the number line at the right.

4. How many units apart are the two points? 26

5. What does this distance represent?

6. Write a subtraction sentence to represent the distance between the points that you graphed.

$6 - -20 = 26$

2.3 Goal: Students will be able to subtract integers.

Key Concept **Subtract Integers** Watch

Words	To subtract an integer, add its additive inverse.
Examples	$2 - 7 = 2 + (-7)$
Symbols	$a - b = a + (-b)$

Notes

Subtract Integers

Fill in the boxes to show how addition is used to subtract integers.

ISG p. 34

1. $3 - 4 \rightarrow 3 + \boxed{-4} = \boxed{-1}$

2. $-1 - 6 \rightarrow -1 + \boxed{-6} = \boxed{-7}$

3. $-2 - (-3) \rightarrow -2 + \boxed{3} = \boxed{1}$

2.3 Goal: Students will be able to subtract integers.

$6 - 15$

$6 + (-15)$

$= -9$

$-7 - 8$

$-7 + (-8)$

$= -15$

$4 - 15$

$4 + (-15)$

$= -11$

$-3 - 12$

$-3 + (-12)$

$= -15$

$15 - (-4) = 15 + 4 = 19$

$-11 - (-7) = -11 + 7 = -4$

$18 - (-2) = 18 + 2 = 20$

$-5 - (-11) = -5 + 11 = 6$

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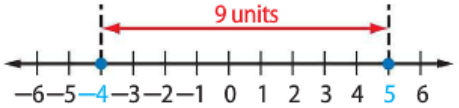
Find Distance on a Number Line

You can find the distance between two integers by using a number line. You can also determine the distance by finding the absolute value of the difference of the numbers. The number line below shows that the distance between −4 and 5 is 9 units.



$|-4-5| = |-9|$ or 9

*distance is always POSITIVE

*to find distance, larger - smaller

$-30 - -22$

$-30 + 22$

-8

Find the distance between each pair of integers.

7 and −7

$7 - (-7)$

$7+7$

14

−30 and −22

$-22 - -30$

$-22 + 30$

8

−6 and 5

$5 - -6$

$5+6$

11

2.3 Goal: Students will be able to subtract integers.

2.3

p. 65

9-32

43

52-59