Please do these problems in your spiral

$-2 + 6 = 4$ 2 ZERO PAIRS

$2 + (-6) = -4$ 2 ZERO PAIRS

$-2 + (-6) = -8$ NO ZERO PAIRS

COMBINE

PG 215

NOPE

Lesson 3

Subtract Integers

What You'll Learn

Scan the lesson. List two real-world scenarios in which you would subtract integers.

- _____
- _____

Essential Question

WHAT happens when you add, subtract, multiply, and divide integers?

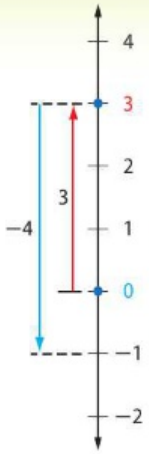
Common Core State Standards

Content Standards
7.NS.1, 7.NS.1c, 7.NS.1d, 7.NS.3

Mathematical Practices
1, 2, 3, 4, 5, 6, 7

Real-World Link

Diving The platform on a diving board is 3 meters high. The actions of a diver climbing up to the diving board platform and diving 1 meter below the water's surface are shown on the number line at the right.



The diver's actions can be represented by the subtraction equation $3 - 4 = -1$.

ADD THE OPPOSITE!

$3 \boxed{-4} = -1$

$3 \boxed{+(-4)} = -1$

1. Write a related addition sentence for the subtraction sentence.

_____

2. Use a number line to find $1 - 5$. Then write a related addition sentence for the subtraction sentence.

Difference: _____ Addition Sentence: _____

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Key Concept

Subtract Integers

Words	To subtract an integer, add its additive inverse.
Symbols	$p - q = p + (-q)$
Examples	$4 - 9 = 4 + (-9) = -5$ $\quad 7 - (-10) = 7 + (10) = 17$

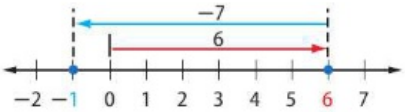
Work Zone

When you subtract 7, the result is the same as adding its additive inverse, −7.

additive inverse

$$6 - 7 = -1 \qquad 6 + (-7) = -1$$

same result



Examples

Tutor

1. Find 8 − 13.

$8 - 13 = 8 + (-13)$ To subtract 13, add −13.

$= -5$ Simplify.

Check by adding $-5 + 13 \stackrel{?}{=} 8$

$8 = 8$ ✓

2. Find −10 − 7.

$-10 - 7 = -10 + (-7)$ To subtract 7, add −7.

$= -17$ Simplify.

Check by adding $-17 + 7 \stackrel{?}{=} -10$

$-10 = -10$ ✓

Show your work.

a. _____

b. _____

c. _____

Got It? Do these problems to find out. WRITE AS ADDITION

a. $6 - 12$ $\quad 6 + (-12)$ $\quad -6$

b. $-20 - 15$ $\quad -20 + (-15) = -35$

c. $-22 - 26$ $\quad -22 + (-26) = -48$

Examples

Tutor

3. **Find 1 − (−2).**

$1 - (-2) = 1 + 2$ To subtract −2, add 2.

$= 3$ Simplify.

4. **Find −10 − (−7).**

$-10 - (-7) = -10 + 7$ To subtract −7, add 7.

$= -3$ Simplify.

Got It? **Do these problems to find out.**

d. $4 - (-12)$

$4 + 12 = 16$

e. $-15 - (-5)$

$-15 + 5$

-10

5 ZERO PAIRS

f. $18 - (-6)$

$18 + 6$

24

Examples

Tutor

5. **Evaluate $x - y$ if $x = -6$ and $y = -5$.**

$x - y = -6 - (-5)$ Replace x with −6 and y with −5.

$= -6 + 5$ To subtract −5, add 5.

$= -1$ Simplify.

6. **Evaluate $m - n$ if $m = -15$ and $n = 8$.**

$m - n = -15 - 8$ Replace m with −15 and n with 8.

$= -15 + (-8)$ To subtract 8, add −8.

$= -23$ Simplify.

Got It? **Do these problems to find out.**

Evaluate each expression if $a = 5$, $b = -8$, and $c = -9$.

g. $b - 10$

$-8 - 10$

$-8 + (-10)$

-18

h. $a - b$

$5 - (-8)$

$5 + 8$

13

i. $c - a$

$-9 - 5$

$-9 + (-5)$

-14

STOP and Reflect

Circle the integer below that will make this number sentence true.

$-5 - (?) = -3$

−8 −2 2

Show your work.

d. _____

e. _____

f. _____

g. _____

h. _____

i. _____