Examples
The Integers

Based on power point presentations by Pearson Education, Inc.
Revised by Ingrid Stewart, Ph.D.

Learning Objectives

1. Define the integers.
2. Find the absolute value of an integer.
3. Add integers.
4. Subtract integers.
5. Multiply integers.
6. Divide integers.
7. Use the calculator to perform operations on integers.

Example 1: Find Absolute Value

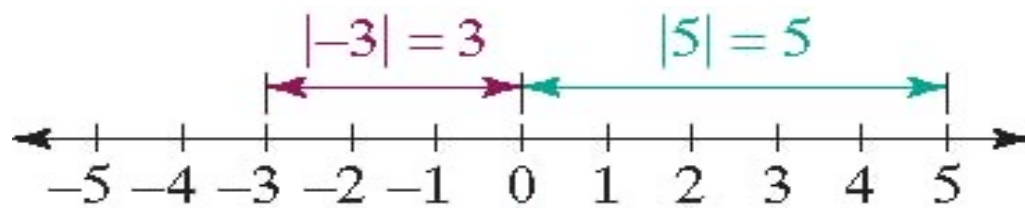Find the absolute value of

a. |−3| b. |5| c. |0|

a. | −3| = 3 because −3 is 3 units away from 0.

b. |5| = 5 because 5 is 5 units away from 0.

c. |0| = 0 because 0 is 0 units away from itself.

Example 2: Add Integers

Evaluate −2 + (− 9).

Both numbers are negative.

Adding a gambling loss to another gambling loss is still a gambling loss.

$-2 + (-9)$

$-2 - 9$ We eliminated the double signs!

-11

Example 3: Add Integers

a. Evaluate 2 + (+ 9).

Both numbers are positive. Note that a positive sign on the first number is always left off.

Adding a gambling gain to another gambling gain is still a gambling gain.

2 + (+ 9) =
2 + 9   We eliminated the double sigs!
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b. Evaluate 0 + (− 9).

Adding a gambling loss to an already empty wallet is a loss.

Therefore, 0 + (− 9) is equal to − 9 .

Example 4: Add Integers

Evaluate 2 + (− 9).

One number is positive and the other one negative. Note that a positive sign on the first number is always left off.

Adding a large gambling loss to a smaller gain, we still have a gambling loss.

2 + (− 9)

2 − 9   We eliminated the double sigs!

− 7

Example 5: Add Integers

Evaluate $-2 + (+9)$.

One number is positive and the other one negative.

Adding a small gambling loss to a larger gambling gain is still a gambling gain.

$-2 + (+9)$

$-2 + 9$ We eliminated the double signs!

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Example 6: Subtract Integers

Evaluate 2 – (+ 9).

We change the operational sign from minus to plus and we change the directional sign of the subtrahend (the second number) to the opposite sign.

2 + (– 9)

Then we use gambling losses/gains to evaluate.

2 – 9   We eliminated the double signs!

– 7

Example 7: Subtract Integers

Evaluate –2 – (– 9).

We change the operational sign from minus to plus and we change the directional sign of the subtrahend (the second number) to the opposite sign.

– 2 + (+ 9)

Then we use gambling losses/gains to evaluate.

– 2 + 9   We eliminated the double signs!

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Example 8: Multiply Integers

a. Evaluate $-2 \cdot 9$.

   One number is positive and the other one negative. Therefore, their product is negative.

   $-2 \cdot 9$
   -18

b. Evaluate $-2 \cdot (-9)$.

   Both numbers are negative. Therefore, their product is positive.

   $-2 \cdot (-9)$
   18

   Usually, we don't show the + sign.

Example 9: Divide Integers

a. Evaluate $-9 \div (-3)$

Both numbers are negative. Therefore, their quotient is a positive 3.

b. Evaluate $9 \div (-3)$.

One number is positive and the other one negative. Therefore, their quotient is -3.

c. Evaluate $9 \div 3$.

Both numbers are positive. Therefore, their quotient is a positive 3.

d. Evaluate $-9 \div 3$.

One number is positive and the other one negative. Therefore, their quotient is -3.