6.3D add, subtract, multiply, and divide integers fluently

INTEGERS NOTES

Adding Integers Notes

When adding integers, look at the signs for each number and follow these rules:

LIKE signs – Add the numbers and take the sign

52 + 12 = 64 (Both numbers are positive, so the answer is positive)

-9 + (-21) = -30 (Both numbers are negative, so the answer is negative

DIFFERENT signs – Subtract the numbers and take the sign of the integer with the largest absolute value.

-80 + 15 = -65 (Signs are different, so subtract and the answer is negative because 80 is greater than 15)

14 + (-10) = 4 (Signs are different, so subtract and the answer is positive because 14 is greater than 10)

Sum Song:
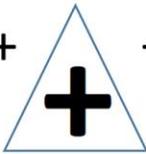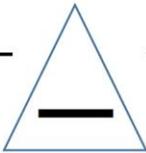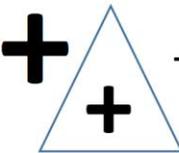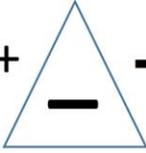
Same sign, add and keep

Different signs, subtract

Take the sign of the bigger number

Then it'll be exact

Use these memory tricks!

How do I remember these steps?

Adding Army:

+ △ +

The "good" guys combine and make a "bigger, better" army.

Add the two sides together to calculate the new size of the "good" guys' army

− △ −

The "bad" guys combine and make a "bigger, badder" army.

Add the two sides together to calculate the new size of the "bad" guys' army

+ △ −

Since there are more "good" guys, they win the battle. But, their army isn't as large.

Subtract the two sides to calculate the new size of the "good" guys' army

good guys – bad guys

+ △ **—**

Since there are more "bad" guys, they win the battle. But, their army isn't as large.

Subtract the two sides to calculate the new size of the "bad" guys' army

bad guys – good guys

Try It!

$-10 + (-3) = $ _____

$-8 + (-18) = $ _____

$22 + 15 = $ _____

$-4 + 9 = $ _____

$6 + (-9) = $ _____

$15 + (-25) = $ _____

Subtracting Integers

Subtracting an integer from another integer is the same as adding the opposite of the second integer to the first integer.

To prevent errors, place parentheses around the 2nd integer if it's *negative* to separate the integer from the subtraction sign.
"Give it a little love, give it a little hug."
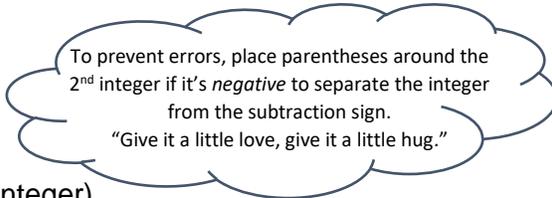
1st integer – 2nd integer =

1st integer + (opposite of 2nd integer)

$-4 - (-2) = $ $10 - (-12) = $ $-18 - 12 = $

−4 + (+2) = −2   10 + (+12) = +22   −18 + (−12) = −20

K: *Keep* the first integer the same

A: *Add*ition sign replaces subtraction sign

O: *Opposite* of second integer

S: *Sum* is found by using the addition of integers rules

Try It!

$-9 - 17 = $ _____

$31 - (-9) = $ _____
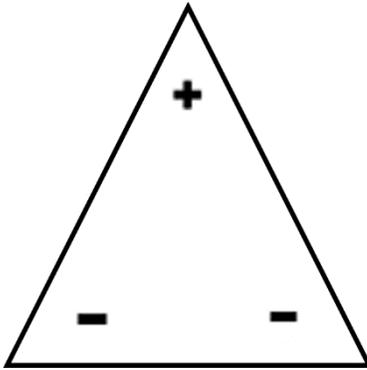
$13 - 18 = $ _____

Multiplying and Dividing Integers

When multiplying or dividing integers, look at the signs for each number and follow these rules:
<u>LIKE signs</u> – Multiply or divide the numbers and make the product or quotient *positive.*
<u>DIFFERENT signs</u> – Multiply or divide the numbers and make the product or quotient *negative*

Try It!

$5(-1) =$ ____

$54 \div (-9) =$ ___

$(-9)(-6) =$ ____

$-52 \div (-4) =$ ____

$11(4) =$ ____

$-39 \div 3 =$ _____

+	-	-
-	+	-
-	-	+

Now, you have a guide. Example: The first row means "Positive times (or divided by) a negative equals a negative.

You can read the rows, diagonals, and columns (up, down, backwards or forwards)!

William has a balance of $771 in his checking account. He makes a deposit of $250 on Monday and a withdrawal of $1,028 on Thursday. What is William's account balance after the withdrawal on Thursday?

Larry scuba dives during his summer vacation. After he reaches a depth of 125 feet below sea level, he ascends at a rate of 13 feet per minute. After 9 minutes, how far is Larry from the surface?

At 5 A.M. the temperature in Bloomington, Minnesota is −25°F. By 11 A.M. the temperate has risen nine degrees. What is the temperature at 11 A.M?

The record high January temperature in Austin, Texas is 90°F. The record low January temperature is −8 °F. What is the difference between the high and the low temperatures?

You are playing a game. You start at 0. Then you score −8 points on each of 4 turns. What is your score after those 4 turns?

A submarine travels 330 feet below sea level. If the submarine ascends 125 feet, what integer expresses the submarine's new position?