

Subtracting integers is often the hardest of the four basic operations for students. Sometimes students try to take a shortcut and they don't change the signs to "add the opposite." The problem can be easy to miss when you don't change these signs.

Here are some other explanations to help you remember why we can change the subtracting problem to an addition problem.

PARTY #1: This is a positive party. It is filled with positive people. What could you do to make this party less positive?

- One option would be to make some of the positive people go home. *This means you are subtracting positive people.*
- A second option would be to bring in some negative people. *This means you are adding negative people.*

Therefore you have accomplished the same thing two different ways.

Subtracting positives is the same as adding negatives.

PARTY #2: This is a negative party. It is filled with negative people. What could you do to make this party less negative (more positive)?

- One option would be to make some of the negative people go home. *This means you are subtracting negative people.*
- A second option would be to bring in some positive people. *This means you are adding positive people.*

Therefore you have accomplished the same thing two different ways.

Subtracting negatives is the same as adding positives.

SUBTRACTION EQUALS ADDING THE OPPOSITE

$$\oplus - \oplus \text{ changes to } \oplus + \ominus$$

$$\oplus - \ominus \text{ changes to } \oplus + \oplus$$

$$\ominus - \oplus \text{ changes to } \ominus + \ominus$$

$$\ominus - \ominus \text{ changes to } \ominus + \oplus$$

Keep Flip Change "KFC" Rule

Adding the Opposite can be simplified into the "KFC" Rule.

"KFC" works like this:

K for **KEEP** the first number as it is

F for **FLIP** the Subtraction into an Addition symbol

C for **CHANGE** the Sign of the second number.

An integer and its opposite are the same distance from 0 on a number line. The integers 5 and -5 are opposites. The sum of an integer and its opposite is 0. To subtract an integer add its opposite.

$$t = 6 - 9$$

$$m = -10 - -12$$

Example 1: $t = 6 + -9$

Example 2: $m = -10 + +12$

$$t = -3$$

$$m = 2$$

Subtract.

1.	$-2 - -8$		2.	$8 - (-4)$		3.	$-6 - 3$	
4.	$6 - -4$		5.	$-1 - 7$		6.	$3 - 8$	
7.	$-2 - 6$		8.	$6 - -9$		9.	$-5 - (-7)$	
10.	$-4 - (-7)$		11.	$4 - -7$		12.	$-4 - 7$	
13.	$2 - (-1) - (-3)$		14.	$-8 - 8$		15.	$2 - 3 - -1$	
16.	$-5 - (-5)$		17.	$-6 - 1$		18.	$6 - -1$	

In hockey, each player is given a plus/minus rating. This rating is based on how many goals are scored by their team while the player is on the ice minus how many goals are scored by the opposing team while the player is on the ice. A high number is good and a low number is bad. Here are the best and worst plus/minus ratings for 2009-2010:

1	Jeff Schultz – WSH	+50	874	Ryan Potulny – EDM	-21
2	Alex Ovechkin – WSH	+45	875	Kyle Okposo – NYI	-22
3	Mike Green – WSH	+39	876	Steve Staios – EDM	-27
4	Nicklas Backstrom – WSH	+37	877	Shawn Horcoff – EDM	-29
5	Daniel Sedin – VAN	+36	878	Rod Brind'Amour – CAR	-29
6	Alexander Semin - WSH	+36	879	Patrick O'Sullivan – EDM	-35

Use the table above to answer the following subtraction problems. Show both your expressions and answers on a separate sheet of paper.

19.	Schultz – Okposo	20.	Staios – Green
21.	Sedin – Ovechkin	22.	O'Sullivan – Semin
23.	Potulny – Backstrom	24.	Brind'Amour – Horcoff
25.	Green – O'Sullivan	26.	Semin – Schultz
27.	Staios – Brind'Amour	28.	Potulny – Schultz
29.	Semin – Sedin – Schultz	30.	Backstrom – Green
31.	Horcoff - Ovechkin	32.	Ovechkin – O'Sullivan
33.	Okposo – Staios	34.	Potulny – Brind'Amour

Activity 2-10: Subtraction of Integers on a Number Line

Name: _____

1. $7 - 2$

2. $4 - 6$

3. $-6 - -1$

4. $5 - -3$

5. $-3 - 4$

6. $-2 - -5$

