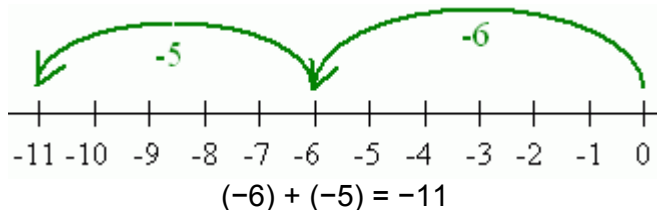# Add & Subtract Integers Fact Sheet

## Adding negative integers.

 and  is 

(−1) +       (−3)           = (−4)

(−6) + (−12) + (−3) + (−10) + (−5)  = −36
debt    debt       debt    debt       debt  = lots of debt

You jump on the number line towards the negative (left), more and more.



(−6) + (−5) = −11

Just add the absolute values, and put the negative sign in front.

## Subtracting a positive integer.

| | |
|---|---|
| 2 − 1 = 1 | (−4) − 0 = −4 |
| 2 − 2 = 0 | (−4) − 1 = −5 |
| 2 − 3 = −1 | (−4) − 2 = −6 |
| 2 − 4 = −2 | (−4) − 3 = −7 |
| etc. | etc. |

It is like temperature dropping, or money being subtracted from a bank account. Subtracting a positive integer just means more debt.

On a number line, subtracting 7 means jumping 7 steps towards the left.

5 − 8 is also the same as 5 + (−8).  In other words, you can change subtracting a number into addition of the opposite number.

Let's say the answer to (−2) − 6 is A and we don't know it yet. Since subtraction is the opposite operation of addition, A + 6 = −2. A = −8 is the only number that works.

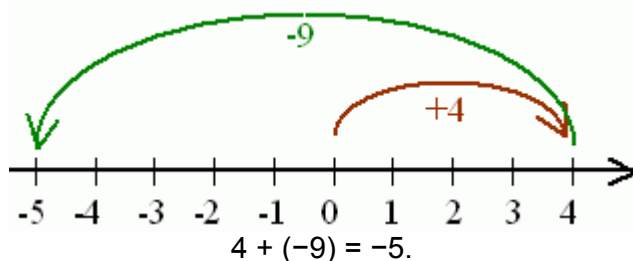## Adding integers with different signs.

7 + (−5) = _____



Some of the positives & negatives cancel each other.  The difference of the absolute values tells you how many didn't get canceled.

Jump on the number line: a positive number is a jump to the right, a negative number means a jump to the left.



4 + (−9) = −5.

## Subtracting a negative integer.

| | |
|---|---|
| 2 − 2 = 0 | (−7) − 2 = (−9) |
| 2 − 1 = 1 | (−7) − 1 = (−8) |
| 2 − 0 = 2 | (−7) − 0 = (−7) |
| 2 − (−1) = 3 | (−7) − (−1) = (−6) |
| 2 − (−2) = 4 | (−7) − (−2) = (−5) |
| etc. | etc. |

When you subtract a negative integer, change it into adding the opposite of the negative number, which is of course positive:

8 − (−4) = 8 + 4 = 12.
(−10) − (−4) = (−10) + 4 = (−6)

Two negatives changes into one positive!

On number line, subtracting (−4) means jumping 4 steps to the left - but before you jump, the extra minus makes you turn around, so you jump to the right instead.

Let's say the answer to 2 − (−3) is B and we don't know it yet. Since subtraction is the opposite operation of addition, B + (−3) = 2. B = 5 is the only number that works.

Similarly, if (−7) − (−3) is C, then C + (−3) = −7. So C is (−4).