

Handout: Addition and Subtraction with Negative Numbers
Secondary 1 Express

Name: _____

Date: _____

1 Examples of Addition and Subtraction

The following table shows a typical example of what happens when you perform addition and subtraction involving negative numbers.

	addition	subtraction
same sign	$7 + 5 = 12$	$7 - 5 = 2$
	$-7 + (-5) = -12$	$-7 - (-5) = -2$ $-5 - (-7) = 2$
different sign	$7 + (-5) = 2$	$7 - (-5) = 12$
	$-7 + 5 = -2$	$-7 - 5 = -12$
		$-5 - 7 = -12$
		$5 - (-7) = 12$

Can you understand why in 2 of the boxes above, the answer is consistently either 2 or -2 and in the other 2 boxes, the answer is consistently either 12 or -12 ? To help you, try counting the number of $(-)$ signs that you see.

2 Commutative Property of Addition

Having the commutative property means that it does not matter which order you perform the operation. For example,

$$7 + 5 = 5 + 7$$
$$12 = 12$$

Addition is commutative. However, subtraction is not commutative. For example,

$$7 - 5 \neq 5 - 7$$
$$2 \neq -2$$

Can you understand why?

3 Subtracting a negative number

If you subtract a negative number, you will find that this is the same as adding the positive number. For example,

$$7 - (-5) = 7 + 5$$
$$= 12$$

Think of the following analogy:

1. I want(+) you to eat(+) ice-cream $+(+) = +$
2. I don't want(-) you to eat(+) ice-cream $- (+) = -$
3. I want(+) you to not eat(-) ice-cream $+ (-) = -$
4. I don't want(-) you to not eat(-) ice-cream $- (-) = +$

In the second and third statements, I do not wish for you to eat ice-cream. However, in the first and fourth statements, I do wish for you to eat ice-cream. Notice how the double negatives in the fourth statement will cancel each other out?