

Calculate with Negative Numbers with & without a Calculator using + - × ÷ NA3

Two negatives **multiplied** together are positive. Similarly, two negatives one **divided** by the other are positive. The results are summarised as follows:

+	×	+	=	+	+	÷	+	=	+
-	×	-	=	+	-	÷	-	=	+
-	×	+	=	-	-	÷	+	=	-
+	×	-	=	-	+	÷	-	=	-

Example

- $-2 \times -4 = 8$
- $-4 \div 2 = -2$
- $4 \times -2 = -8$
- $4 \div 2 = 2$

Also use the rules when + - symbols are **next to each other!**

Example

- $3 - -3$ or written $3 - (-3) = 3 + 3 = 6$
- $3 + -3$ or written $3 + (-3) = 3 - 3 = 0$

Your Turn!!

- Find a) -8×-3 b) -12×9 c) $\frac{10}{-2}$ *Hint: This is a way of writing $10 \div -2$* d) $-8 \div -4$ e) $5 - -6$

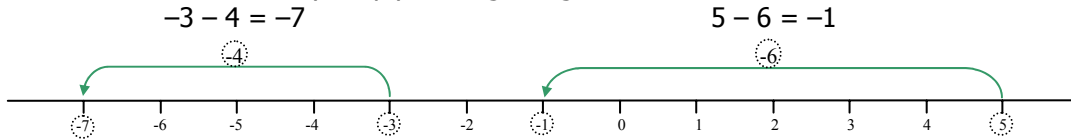
Calculator Check – Make sure you can use your calculator – each one is different

Do the examples 1-4 above on your calculator. Check you get the 4 results shown. To enter a negative number use the \pm button or the $(-)$ button, e.g. To enter -1×-6 , press, $(-)$ 1 \times $(-)$ 6 OR 1 \pm \times 6 \pm .

Reminder

Normal subtractions are calculated by simply moving along the number line.

Example



RAPID 'ACID' TEST – Blank out the page above before answering these!

- Find 1. -8×-4 2. $3 - -12$ 3. $-1 - 4$ 4. $\frac{-10}{-5}$ 5. $\frac{-4}{2}$ 6. $3 - +12$

Substitute Numbers into a Formula – NA4

Example 1

For the equation, $y = 3x + 7$, find y when x is -2 .

Solution

$$y = 3 \times (-2) + 7$$

$$y = -6 + 7$$

$$y = 1$$

Reminder

+	×	+	=	+
-	×	-	=	+
-	×	+	=	-
+	×	-	=	-

Replace the letter, x , with its specified value, -2 .

It's an excellent habit to place the substituted values in brackets!!

Look at the sign to the left of the number to help you do the multiplication.

$$-7 \times (-2) = 14$$

Example 2

For the equation, $y = 3x^2 - 7x + 2$, find y when x is -2

Solution

$$y = 3(-2)^2 - 7(-2) + 2$$

$$y = 3 \times 4 + 14 + 2$$

$$y = 12 + 14 + 2 = 28$$

Remember

$$(-2)^2 = (-2) \times (-2) = 4$$

Your Turn!!

- a) In Examples 1) and 2) above, find y when x is 2. b) In Examples 1) and 2) above, find y when x is -3 .

RAPID 'ACID' TEST – Blank out the page above before answering these!

1. Find y when x is -2 , where $y = 7 - 3x$ 2. Find y when x is -5 , where $y = 1 - 3x^2$