Calculations in ez Form Calculator

Contents

This document will explain how the calculation system works in ez Form Calculator for WordPress. The plugin allows you to add element values, subtract, multiply, divide and many more math operations with ease.

The plugin works like this:

- Element values are calculated **automatically**
- Values are added up from **top to bottom**
- Some elements might contain **calculation rows** (e.g. multiply with other elements)
- All calculation elements might **overwrite the price** from where it's positioned (if the option 'overwrite_price' is set to 'Yes')

In general, there are many ways to set up a form. The most common ones are described below.

Default Calculation

Elements are calculated from top to bottom, so every element is added **consecutively**. For example, a simple order consists of only Numbers elements. The calculation is handled like this:

- Product A: 15 | Price = 15
- Product B: 20 | Price = 35
- Product C: 10 | Price = 45
- Price = 45

Advanced Calculation with Subtotal Elements

Complex calculation forms can be realized with the help of Subtotal elements. This way, **multiple calculations** can be created in a single form.

- Product A: 5

- Product B: 10
- Width: 100
- Height: 70
- Subtotal 1:
  - Calculation: Product A * Product B = 5 * 10 = 50
- Subtotal 2:
  - Calculation: Width * Height = 100 * 70 = 7000
- Subtotal 3:
  - Calculation: Subtotal 1 + Subtotal 2 = 50 + 7000 = 7500
- Price = 7500

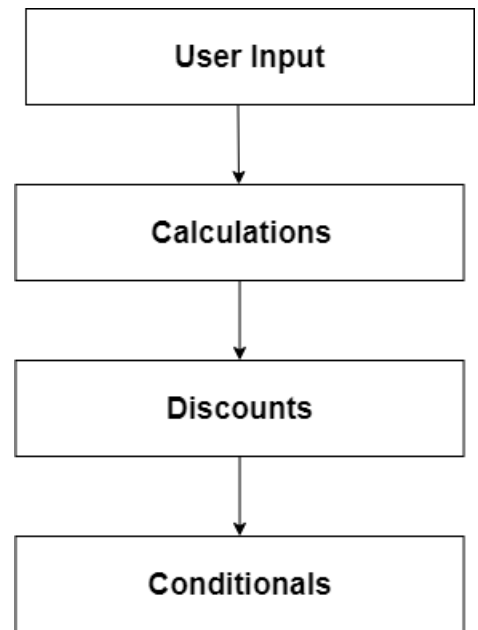This article shows how math operators are used in the plugin.

The Flow

The following flowchart shows how the user input is processed by the plugin.

First, the (user) input is registered and the calculations of all elements in the form are processed. The "Calculate" section in the element options are run from top to bottom.

Afterward, the discount section is processed. Every row in the discount section will be checked if the calculated value of the element should be modified, for example, set a fixed value, increase value by a fixed percentage, modify the factor and so on.

Subsequently, the conditional section is processed. Depending on the value of the current element, the plugin will perform conditional actions, if all conditions are met.

```
┌─────────────────────┐
│     User Input      │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│    Calculations     │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│      Discounts      │
└─────────────────────┘
           │
           ▼
┌─────────────────────┐
│    Conditionals     │
└─────────────────────┘
```

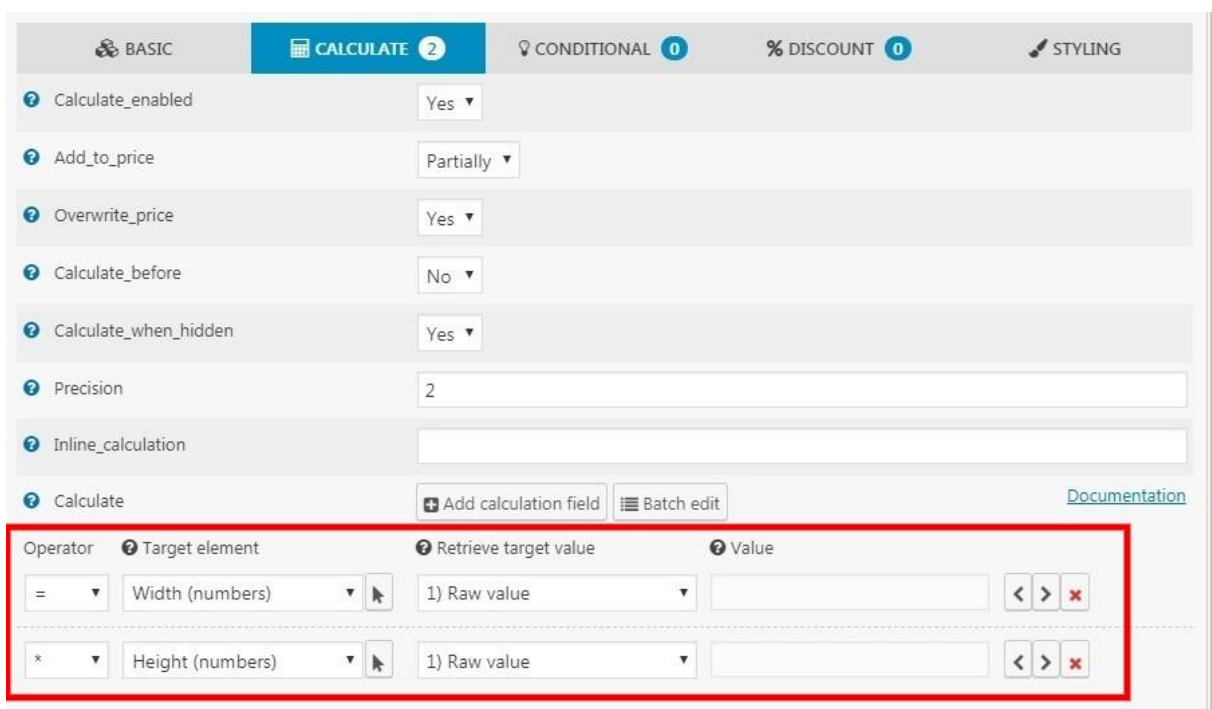# Width * Height Calculation

In this form, there are **two Numbers elements** called **Width** and **Height** as well as an additional **Subtotal element** called **Area**. Both Width and Height can be changed by the user whereas the **Subtotal element calculates the area**.

In order to see the calculation behind the form, **click on the Area element** and move to the section **Calculation**. The calculation rows are responsible for the area calculation.

- First, the Subtotal element retrieves the value of the Width element (let's say the value is 10)
- Subsequently, the current value will be multiplied by the Height element (let's say 5)
- The final calculation is 10 * 5 = 50

Calculating with Target Values

First, you must determine which value to retrieve since there are multiple ways to do this. The most common ones are **1) Raw value** and **4) Calculated target value without subtotal**.

1. Raw value
   - This will retrieve the "raw" target element's value, i.e. the value which is displayed in the input field
   - If there is a factor defined in the target element, the retrieved value will be multiplied with the factor.
2. Raw value without factor
   - The same as #1 but this time, the value will ignore any factor.
3. Calculated target value with subtotal
   - Elements like Numbers, Dropdowns etc. where calculation rows are possible will not show the calculated value in the input field
   - This option will retrieve the calculated target value with its subtotal value (i.e. the price of the current position + the calculated value)
4. Calculated target value without subtotal
   - The same as #3 but this time, the subtotal value will not be added to the calculated value

Generally, you can almost always use the **1) Raw value** from **Subtotals** since these elements update their **input field immediately**. Other elements such as Numbers, Dropdowns etc. where **any calculation row** is present should be retrieved with **4) Calculated value without subtotal**.

Note: do not use 3) or 4) in the same element since this will result in an infinite loop.

A	B
3€	10€

Use raw target value

10€

This element uses the raw input value of Element B.

Use calculated target value without subtotal

50€

This element (Use calculated target value without subtotal) shows the **calculated value** of element B **without** its subtotal value.

Element B contains a calculation row to **multiply** the input value by 5, so the following value is returned:

```
[calculated value] = [input value] + [calculations]
```

Example: A = 3, B = 10, B contains a calculation row: *5

```
[calculated_value] = 10 * 5 = 50
```

Use calculated target value with subtotal

103€

The above element (Use calculated target value with subtotal) shows the **calculated value** of element B **with** its respective subtotal value.
The general formula for "Use calculation value with Subtotal" is:

```
[subtotal value] + [calculated value]
```

Since the plugin takes the **subtotal** from the **previous element** as the basis (unless you override it in the first calculation row with the equals operator), the **returned value** will be:

```
[calculated value] = B * 5
```

```
[subtotal] = A + [calculated value]
```

```
[returned value] = [subtotal] + [calculated value]
```

Example: A = 3, B = 10

```
[calculated value] = 10 * 5 = 50
```

```
[subtotal] = 3 + 50 = 53
```

```
[returned value] = 53 + 50 = 103
```

Nested Calculations

a

10€

b

5€

x

50€

y

2€

(x - (a + b)) * y

70€

Price

70 €

Nested calculations require open and closing brackets which you can find in the target element dropdown in the calculation section. This way, you don't need to use placeholders anymore.

If you look at the following screenshot, you can see that calculation rows are indented. This is only necessary for open and closing brackets though you can understand better how the element is calculated.

Make sure that paired open and closing brackets have the same priority or the element will not calculate correctly. You can increase / decrease priority with the left and right arrow buttons in the calculation section.

Relevant Articles

- https://ez-form-calculator.ezplugins.de/documentation/calculation/
- https://ez-form-calculator.ezplugins.de/wordpress-form-examples/
- https://www.youtube.com/watch?v=g5huCHr-gFk&t=479s