

# How do you calculate a weighted mean in R?

Authored by  
**stats writer**

April 24, 2024

## RECOMMENDED CITATION

stats writer (2024). *How do you calculate a weighted mean in R?*. PSYCHOLOGICAL SCALES. Retrieved from <https://scales.arabpsychology.com/?p=138980>

Calculating a weighted mean in R involves using a specific formula to account for the varying weights of different values in a dataset. The weighted mean is calculated by multiplying each value by its corresponding weight, then dividing the sum of these products by the sum of the weights. This allows for a more accurate representation of the data, as it takes into consideration the relative importance or significance of each value. The resulting weighted mean can be easily calculated in R using the "weighted.mean()" function, making it a useful tool for analyzing and interpreting data in a variety of fields.

## Calculate a Weighted Mean in R

To calculate a weighted mean in R, you can use the built-in function, which uses the following syntax:

```
weighted.mean(x, w)
```

**where:**

**x:** A vector of raw data values **w:** A vector of weights

This tutorial shows several examples of how to use this function in practice.

### Example 1: Weighted Mean of a Vector

The following code shows how to calculate the weighted mean for a given vector of data:

```
#define vector of data values  
data <- c(3, 5, 6, 7, 8)
```

```
#define vector of weights
```

```
weights <- c(.1, .3, .3, .2, .1)
```

```
#calculate weighted mean
```

```
weighted.mean(x=data, w=weights)
```

**5.8**

**The weighted mean turns out to be 5.8.**

**Example 2: Weighted Mean of a Column in a Data Frame**

**The following code shows how to calculate the weighted mean for a column in a data frame, using another column as the weights:**

```
#create data frame
```

```
df <- data.frame(values = c(3, 5, 6, 7, 8),  
weights = c(.1, .3, .3, .2, .1))
```

```
#calculate weighted mean
```

```
weighted.mean(x=df$values, w=df$weights)
```

**5.8**

**The weighted mean turns out to be 5.8.**

**Note that you can also calculate the weighted mean for a column in a data frame by using a separate vector as the weights:**

```
#create data frame
```

```
df <- data.frame(values = c(3, 5, 6, 7, 8),
```

```
other_data = c(6, 12, 14, 14, 7),
```

```
more_data = c(3, 3, 4, 7, 9))
```

```
#define vector of weights
```

```
weights <- c(.1, .3, .3, .2, .1)
```

```
#calculate weighted mean
```

```
weighted.mean(x=df$values, w=weights)
```

```
5.8
```

**Once again the weighted mean turns out to be 5.8.**

**When to Use a Weighted Mean**