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How to Calculate Ratios in R (With Examples)

You can use the following methods to calculate the ratio between values in two columns in R:

Method 1: Use Base R

```
#calculate ratio between variable1 and variable2
df$ratio <- df$variable1/df$variable1

#calculate ratio between variable1 and variable2, rounded to 2 decimal
df$ratio <- round(df$variable1/df$variable2, 2)
```

Method 2: Use dplyr

```
library(dplyr)

#calculate ratio between variable1 and variable2
df <- df %>%
    mutate(ratio = variable1/variable2)

#calculate ratio between variable1 and variable2, rounded to 2 decimal
df <- df %>%
    mutate(ratio = round(variable1/variable2, 2))
```

This tutorial explains how to use each method in practice with the following data frame that shows the total shots made and attempted by various basketball players:

```
#create data frame
df <- data.frame(players=c('A', 'B', 'C', 'D', 'E', 'F', 'G', 'H'),
                  makes=c(4, 4, 3, 6, 7, 8, 3, 10),
                  attempts=c(12, 7, 5, 6, 10, 12, 5, 19))

#view data frame
df

  players makes attempts
1      A     4       12
2      B     4        7
3      C     3        5
4      D     6        6
5      E     7       10
6      F     8       12
7      G     3        5
8      H    10       19
```

Example 1: Calculate Ratios Using Base R

The following code shows how to calculate the ratio between the values in the **makes** and **attempts** columns using base R:

```
#calculate ratio between makes and attempts columns
df$ratio <- df$makes/df$attempts

#view updated data frame
df

  players makes attempts      ratio
1      A     4       12  0.3333333
2      B     4        7  0.5714286
3      C     3        5  0.6000000
4      D     6        6  1.0000000
```

5	E	7	10	0.7000000
6	F	8	12	0.6666667
7	G	3	5	0.6000000
8	H	10	19	0.5263158

The ratio of **makes** to **attempts** for the first player is $4 / 12 = 0.33$.

In other words, the first player made about **33%** of their shot attempts.

We can interpret the ratio values for every other player in a similar manner.

We can also use the **round()** function to round the ratio values to a certain number of decimal places:

```
#calculate ratio between makes and attempts columns, rounded to 2 decimal places
df$ratio <- round(df$makes/df$attempts, 2)
```

```
#view updated data frame
```

```
df
```

	players	makes	attempts	ratio
1	A	4	12	0.33
2	B	4	7	0.57
3	C	3	5	0.60
4	D	6	6	1.00
5	E	7	10	0.70
6	F	8	12	0.67
7	G	3	5	0.60
8	H	10	19	0.53

Each of the values in the **ratio** column are now rounded to two decimal places.

Example 2: Calculate Ratios Using dplyr

The following code shows how to calculate the ratio between the values in the **makes** and **attempts** columns using the **dplyr** package:

```
library(dplyr)

#add new column that shows ratio of makes to attempts
df <- df %>%
    mutate(ratio = makes/attempts)

#view updated data frame
df

  players makes attempts      ratio
1      A     4        12  0.3333333
2      B     4         7  0.5714286
3      C     3         5  0.6000000
4      D     6         6  1.0000000
5      E     7        10  0.7000000
6      F     8        12  0.6666667
7      G     3         5  0.6000000
8      H    10        19  0.5263158
```

We can also use the **round()** function to round the ratio values to a certain number of decimal places:

```
library(dplyr)

#add new column that shows ratio of makes to attempts, rounded to 2 dec.
df <- df %>%
    mutate(ratio = round(makes/attempts, 2))

#view updated data frame
df

  players makes attempts ratio
1      A     4        12  0.33
2      B     4         7  0.57
3      C     3         5  0.60
```

4	D	6	6	1.00
5	E	7	10	0.70
6	F	8	12	0.67
7	G	3	5	0.60
8	H	10	19	0.53

Each of the values in the **ratio** column are now rounded to two decimal places.

Notice that the base R method and the dplyr method produce the same results.

Additional Resources

The following tutorials explain how to perform other common tasks in R:

[How to Filter for Unique Values Using dplyr](#)

[How to Filter by Multiple Conditions Using dplyr](#)

[How to Count Number of Occurrences in Columns in R](#)



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