What is the sample size required to estimate a proportion with a desired level of confidence and margin of error?

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The sample size is the number of individuals or elements that need to be included in a study or survey in order to accurately estimate a proportion with a desired level of confidence and margin of error. In other words, it is the minimum number of participants needed to obtain reliable and representative results. The required sample size is influenced by factors such as the desired level of confidence, the margin of error, and the population size. A larger sample size generally leads to a more precise estimate, while a smaller sample size may result in a less accurate representation of the population. Determining the appropriate sample size is crucial in ensuring the validity and accuracy of research findings.

Sample Size Calculator for a Proportion

```
@import
url('https://fonts.googleapis.com/css?family=Droid+Serif|Raleway');

.axis-y .domain {
display: none;
}

h1 {
color: black;
text-align: center;
margin-top: 15px;
margin-bottom: 0px;
font-family: 'Raleway', sans-serif;
}

h2 {
```

```
color: black;
font-size: 20px;
text-align: center;
margin-bottom: 15px;
margin-top: 15px;
font-family: 'Raleway', sans-serif;
}

p {
color: black;
text-align: center;
margin-bottom: 15px;
margin-top: 15px;
font-family: 'Raleway', sans-serif;
}

#words_intro {
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
}

#words_intro_center {
```

```
text-align: center;
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
}

#words_outro {
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
}

#words {
color: black;
font-family: Raleway;
max-width: 550px;
margin: 25px auto;
line-height: 1.75;
padding-left: 100px;
}
```

```
#calcTitle {
text-align: center;
font-size: 20px;
margin-bottom: 0px;
font-family: 'Raleway', serif;
}

#hr_top {
width: 30%;
margin-bottom: 0px;
margin-top: 10px;
border: none;
height: 2px;
color: black;
background-color: black;
}

#hr_bottom {
width: 30%;
margin-top: 15px;
border: none;
height: 2px;
color: black;
background-color: black;
```

```
}

.input_label_calc {
display: inline-block;
vertical-align: baseline;
width: 350px;
}

#button_calc {
border: 1px solid;
border-radius: 10px;
margin-top: 20px;
padding: 10px 10px;
cursor: pointer;
outline: none;
background-color: white;
color: black;
font-family: 'Work Sans', sans-serif;
border: 1px solid grey;
/* Green */
}

#button_calc:hover {
background-color: #f6f6f6;
border: 1px solid black;
```

```
}

.label_radio {
text-align: center;
}
```

The sample size required to estimate a population proportion with a certain level of confidence and a desired margin of error is calculated as:Sample size = p*(1-p)*(zα/2/E)2where:p: The expected proportion. If you're unsure, leave this as 0.5.zα/2: The z critical valueE: The desired margin of errorTo find the sample size required to estimate a population proportion, simply fill in the boxes below and then click the Calculate" button.

Sample Size: 1068

```
function calc() {
//get input values
var z = document.getElementById('z').value*1;
var p = document.getElementById('p').value*1;
var E = document.getElementById('E').value*1;

//find number of bins
```

```
var n = Math.ceil(p*(1-p)*Math.pow((Math.abs(jStat.normal.inv((1-z)/2, 0, 1))/E), 2));

//output
document.getElementById('n').innerHTML = n;
}
```