Table of Contents
### Examples borrowed from:
### http://www.statmethods.net/stats/power.html
### You can also look at:
### http://www.ats.ucla.edu/stat/R/dae/t_test_power.htm

```r
if(!require(pwr)){
  install.packages("pwr",
  repos="http://ftp.heanet.ie/mirrors/cran.r-project.org/"
#  install.packages("pwr", lib="/home/tuusuario/R/x86_64-pc-linux-gnu-
library/2.15", repos="http://ftp.heanet.ie/mirrors/cran.r-project.org/"
}
#require(pwr, lib="/home/tuusuario/R/x86_64-pc-linux-gnu-gnu-library/2.15" )
require(pwr)

# What is the power of a one-tailed t-test, with a
# significance level of 0.01, 25 people in each group,
# and an effect size equal to 0.75?

pwr.t.test(n=25,d=0.75,sig.level=.01,alternative="greater")
cat("</br></br>")

# Using a two-tailed test proportions, and assuming a
# significance level of 0.01 and a common sample size of
# 30 for each proportion, what effect size can be detected
# with a power of .75?

pwr.2p.test(n=30,sig.level=0.01,power=0.75)
cat("</br></br>")

# For a one-way ANOVA comparing 5 groups, calculate the
# sample size needed in each group to obtain a power of
# 0.80, when the effect size is moderate (0.25) and a
# significance level of 0.05 is employed.

pwr.anova.test(k=5,f=.25,sig.level=.05,power=.8)
cat("</br></br>")
```

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```
Two-sample t test power calculation

 n = 25
d = 0.75
```
\[
\begin{align*}
sig.level &= 0.01 \\
power &= 0.5988572 \\
alternative &= \text{greater}
\end{align*}
\]

NOTE: \(n\) is number in *each* group

\[
\text{Difference of proportion power calculation for binomial distribution (arcsine transformation)}
\]

\[
\begin{align*}
h &= 0.8392269 \\
n &= 30 \\
sig.level &= 0.01 \\
power &= 0.75 \\
alternative &= \text{two.sided}
\end{align*}
\]

NOTE: same sample sizes

\[
\text{Balanced one-way analysis of variance power calculation}
\]

\[
\begin{align*}
k &= 5 \\
n &= 39.1534 \\
f &= 0.25 \\
sig.level &= 0.05 \\
power &= 0.8
\end{align*}
\]

NOTE: \(n\) is number in each group