1. Mean difference (2 groups)

$$n = \frac{2 * \left(Z_\alpha + Z_\beta\right)^2 * SD^2}{d^2}$$

Z_α = standard normal derivative for the type 1 error (value from std normal distribution (mean=0, SD=1) (MS Excel function NORM.INV or NORMSINV)
Z_β = standard normal derivative for the type 2 error (value from standard normal distribution (mean=0, SD=1); (MS Excel function NORM.INV or NORMSINV)
SD = standard deviation
d = difference between group means

2. Proportion difference (2 groups)

$$n = \frac{\left(Z_\alpha + Z_\beta\right)^2 * p_c(1-p_c) + p_t(1-p_t)}{(p_c - p_t)^2}$$

Z_α = standard normal derivative for the type 1 error (value from std normal distribution (mean=0, SD=1) (MS Excel function NORM.INV or NORMSINV)
Z_β = standard normal derivative for the type 2 error (value from standard normal distribution (mean=0, SD=1); (MS Excel function NORM.INV or NORMSINV)
p_c = proportion of subjects having the event in the control (placebo) group
p_t = proportion of subjects having the event in the treatment group (percent in control group reduced by the treatment)

3. Questionnaire

$$n = \frac{\frac{Z_\alpha^2 p(1-p)}{e^2}}{1 + \left(\frac{Z_\alpha^2 p(1-p)}{e^2 N}\right)}$$

Z_α = standard normal derivative for the type 1 error (value from std normal distribution (mean=0, SD=1) (MS Excel function NORM.INV or NORMSINV)
p = response distribution
e = margin of error
N = population size

4. Supplementary calculations

a. Factor to increase sample size for non-compliance

$$\frac{1}{(1-a-b)^2}$$

a = drop-outs proportion
b = drop-ins proportion

b. Factor to increase sample size for loss to follow-up

$$\frac{1}{1-c}$$

c = lost to follow-up proportion