

WARSZTATY BADAWCZE - PROJEKT 6

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Warning: package 'gsDesign' was built under R version 3.1.2

Warning: package 'ggplot2' was built under R version 3.1.2

Warning: package 'xtable' was built under R version 3.1.2

Warning: package 'RUnit' was built under R version 3.1.2

Warning: package 'plyr' was built under R version 3.1.2

Warning: package 'pwr' was built under R version 3.1.2

Warning: package 'Hmisc' was built under R version 3.1.2

Warning: package 'Formula' was built under R version 3.1.2

PYTANIE 1

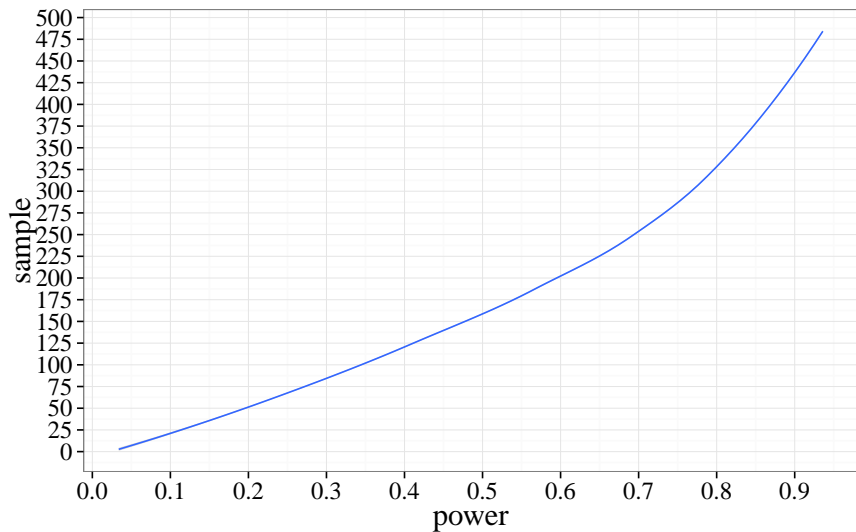
```
nBinomial( p1 = 0.45, p2 = 0.3, alpha = 0.05, n = 200,  
           outtype = 2, sided = 2)
```

	n1	n2	Power
1	100	100	0.5924

```
bpower( p1 = 0.45, p2 = 0.3, n = 200, n1 = 100, n2 = 100, alph
```

Power
0.5924

PYTANIE 1



PYTANIE 2

```
var <- function(x){ 6.5^2*sqrt(x) }  
var(52) # wariancja w 52 tyg
```

```
[1] 304.7
```

```
(dif <- 15 - qnorm( 0.55 )*sqrt( var(52) ) -  
  (15 - qnorm( 0.7 )*sqrt( var(52) )))
```

```
[1] 6.96
```

```
nNormal( delta1 = dif, delta0 = 0, n = 200, alpha = 0.05,  
  side = 2, sd = sqrt( var(52) ), ratio = 1,  
  outtype =2 )
```

```
      n1  n2 Power  
1 100 100 0.805
```

PYTANIE 2

```
# ręczne sprawdzenie
```

```
sigma <- sqrt( var(52)*(1/100+1/100) ) # sigma efektu  
beta <- pnorm( qnorm(1-0.05/2), dif/sigma ) -  
        pnorm( qnorm(0.05/2), dif/sigma )  
(1-beta)
```

```
[1] 0.805
```

PYTANIE 3

```
var(26)
```

```
[1] 215.4
```

```
(dif <- 15 - qnorm( 0.55 )*sqrt( var(52) ) -  
  (15 - qnorm( 0.7 )*sqrt( var(52) )))
```

```
[1] 6.96
```

```
nNormal( delta0 = 0, delta1 = dif/2, n = 200,  
  alpha = 0.05, sided = 2, sd = sqrt( var(26) ),  
  ratio = 1, outtype = 2)
```

```
      n1  n2  Power  
1 100 100 0.3884
```

PYTANIE 4

```
(dif <- 15 - qnorm( 0.55 )*sqrt( var(26) ) - 6.6)
```

```
[1] 6.556
```

```
nNormal( delta0 = 0, delta1 = dif, n = 200,  
          alpha = 0.05, side = 2, sd = sqrt( var(26) ),  
          ratio = 1, outtype = 2)
```

```
      n1  n2  Power  
1 100 100 0.8846
```


PYTANIE 5

RANOVA

PYTANIE 6

```
(dif <- 15 - qnorm( 0.55 )*sqrt( var(52) ) -  
  (15 - qnorm( 0.7 )*sqrt( var(52)) ) )
```

```
[1] 6.96
```

```
nNormal( delta0 = -dif, delta1 = 0, sd = sqrt( var(52) ),  
  alpha = 0.05, beta = 0.2, outtype = 2)
```

```
      n1      n2  
1 77.77 77.77
```

PYTANIE 6

```
2*( qnorm( 0.8 ) + qnorm( 0.95) )^2/(  
  dif/sqrt( var(52) ))^2
```

```
[1] 77.77148
```

```
# ręczne sprawdzenie, OK
```

PYTANIE 7

```
nNormal( delta0 = -5, delta1 = 0, sd = sqrt( var(52) ),  
         alpha = 0.05, beta = 0.2, outtype = 2)
```

```
      n1      n2  
1 150.6907 150.6907
```

```
2*( qnorm( 0.8 ) + qnorm( 0.95 ))^2/( 5/sqrt( var(52) ))^2
```

```
[1] 150.6907
```

```
# ręczne sprawdzenie, OK
```

PYTANIE 8

```
nNormal( delta0 = -dif, delta1 = 0, sd = sqrt( var(52) ),  
          alpha = 0.05, beta = 0.2, outtype = 2,  
          ratio = 1/2 )
```

```
          n1      n2  
1 116.6572 58.32861
```

```
n <- 3*( qnorm( 0.8 ) + qnorm( 0.95 ) )^2/(  
  dif/sqrt( var(52) ) )^2  
# ręczne sprawdzenie, OK  
c(n, 0.5*n)
```

```
[1] 116.65722 58.32861
```

PYTANIE 9

```
nNormal( delta0 = -5, delta1 = -2, sd = sqrt( var(52) ),  
          alpha = 0.05, beta = 0.2, outtype = 2)
```

```
      n1      n2  
1 418.5853 418.5853
```

```
(n <- 2*( qnorm( 0.8 ) + qnorm( 0.95 ))^2/(  
  (-2+5)/sqrt( var(52) ))^2)
```

```
[1] 418.5853
```

PYTANIE 10

```
nNormal( delta0 = -5, delta1 = 3, sd = sqrt( var(52) ),  
          alpha = 0.05, beta = 0.2, outtype = 2)
```

```
      n1      n2  
1 58.86356 58.86356
```

```
(n <- 2*( qnorm( 0.8 ) + qnorm( 0.95 ))^2/(  
  (3+5)/sqrt( var(52) ))^2)
```

```
[1] 58.86356
```