```
     name:  <unnamed>
      log:  /Users/carsoncrenshaw/Library/CloudStorage/OneDrive-Universityof
> Virginia/RMDA I/RMDA1_Homework3_log.smcl
 log type:  smcl
opened on:  29 Sep 2023, 16:23:42
```

1 .
2 .
3 . *********
4 . *   1: Homework Code
5 . *********
6 .
7 .   **2d**
8 .   power twoprop 0.08, n1(7950) n2(7971) alpha(0.05) beta(0.2) directi
> on(upper)

```
Performing iteration ...

Estimated experimental-group proportion for a two-sample proportions test
Pearson's chi-squared test
H0: p2 = p1  versus  Ha: p2 != p1; p2 > p1

Study parameters:

        alpha =    0.0500
         beta =    0.2000
            N =    15,921
           N1 =     7,950
           N2 =     7,971
        N2/N1 =    1.0026
           p1 =    0.0800

Estimated effect size and experimental-group proportion:

        delta =    0.0125  (difference)
           p2 =    0.0925
```

```
  9 .
 10 .          **3c**
 11 .          power twoprop 0.14, n1(7950) n2(7971) alpha(0.05) beta(0.2) directi
    > on(upper)

    Performing iteration ...

    Estimated experimental-group proportion for a two-sample proportions test
    Pearson's chi-squared test
    H0: p2 = p1  versus  Ha: p2 != p1; p2 > p1

    Study parameters:

            alpha =    0.0500
             beta =    0.2000
                N =    15,921
               N1 =     7,950
               N2 =     7,971
            N2/N1 =    1.0026
               p1 =    0.1400

    Estimated effect size and experimental-group proportion:

            delta =    0.0158  (difference)
               p2 =    0.1558

 12 .
 13 .          **3d**
 14 .          power twoprop 0.14, n1(7950) n2(7971) alpha(0.01) beta(0.2) directi
    > on(upper)

    Performing iteration ...

    Estimated experimental-group proportion for a two-sample proportions test
    Pearson's chi-squared test
    H0: p2 = p1  versus  Ha: p2 != p1; p2 > p1

    Study parameters:
```

```
        alpha =     0.0100
         beta =     0.2000
            N =    15,921
           N1 =     7,950
           N2 =     7,971
        N2/N1 =     1.0026
           p1 =     0.1400
```

Estimated effect size and experimental-group proportion:

```
        delta =     0.0193  (difference)
           p2 =     0.1593
```

```
15 .
16 .             **3e**
17 .             power twoprop 0.14 0.1558, alpha(0.01) beta(0.2)
```

Performing iteration ...

Estimated sample sizes for a two-sample proportions test
Pearson's chi-squared test
H0: p2 = p1 versus Ha: p2 != p1

Study parameters:

```
        alpha =     0.0100
         beta =     0.2000
        delta =     0.0158  (difference)
           p1 =     0.1400
           p2 =     0.1558
```

Estimated sample sizes:

```
            N =    23,582
  N per group =    11,791
```

```
18 .
19 .            **3f**
20 .            power twoprop 0.14 0.15, alpha(0.01) beta(0.2)

    Performing iteration ...

    Estimated sample sizes for a two-sample proportions test
    Pearson's chi-squared test
    H0: p2 = p1  versus  Ha: p2 != p1

    Study parameters:

            alpha =    0.0100
             beta =    0.2000
            delta =    0.0100  (difference)
               p1 =    0.1400
               p2 =    0.1500

    Estimated sample sizes:

                N =    57,914
      N per group =    28,957

21 .
22 .            power twoprop 0.14, n(1000(2500)60000) alpha(0.01) beta(0.2)

    Performing iteration ...

    Estimated experimental-group proportion for a two-sample proportions test
    Pearson's chi-squared test
    H0: p2 = p1  versus  Ha: p2 != p1; p2 > p1
```

alpha	beta	N	N1	N2	delta	p1	p2
.01	.2	1,000	500	500	.08321	.14	.2232
.01	.2	3,500	1,750	1,750	.04247	.14	.1825
.01	.2	6,000	3,000	3,000	.03201	.14	.172
.01	.2	8,500	4,250	4,250	.02671	.14	.1667
.01	.2	11000	5,500	5,500	.02337	.14	.1634
.01	.2	13500	6,750	6,750	.02103	.14	.161
.01	.2	16000	8,000	8,000	.01927	.14	.1593
.01	.2	18500	9,250	9,250	.01789	.14	.1579
.01	.2	21000	10500	10500	.01677	.14	.1568
.01	.2	23500	11750	11750	.01583	.14	.1558
.01	.2	26000	13000	13000	.01503	.14	.155

```
    .01      .2    28500   14250   14250   .01434      .14     .1543
    .01      .2    31000   15500   15500   .01374      .14     .1537
    .01      .2    33500   16750   16750   .01321      .14     .1532
    .01      .2    36000   18000   18000   .01273      .14     .1527
    .01      .2    38500   19250   19250    .0123      .14     .1523
    .01      .2    41000   20500   20500   .01192      .14     .1519
    .01      .2    43500   21750   21750   .01156      .14     .1516
    .01      .2    46000   23000   23000   .01124      .14     .1512
    .01      .2    48500   24250   24250   .01094      .14     .1509
    .01      .2    51000   25500   25500   .01067      .14     .1507
    .01      .2    53500   26750   26750   .01041      .14     .1504
    .01      .2    56000   28000   28000   .01017      .14     .1502
    .01      .2    58500   29250   29250   .00995      .14     .1499
```

23 .
24 .
25 . *********
26 . *   2: Close log file
27 . *********
28 .
29 .   log close
        name: **\<unnamed\>**
         log: **/Users/carsoncrenshaw/Library/CloudStorage/OneDrive–Universityof**
  > Virginia/RMDA I/RMDA1_Homework3_log.smcl
    log type: **smcl**
  closed on: **29 Sep 2023, 16:23:42**