

60080079 Introduction to Statistical Methods
Semester 2 2023-2024
Solutions 3

1. Write your answer as a single-digit number: **2**
2. Write your answer as a single-digit number: **3**
3. Write your answer as a single-digit number: **1**
4. Write your answer as a three-digit number: **112**
5. Write your answer as a single-digit number: **2**
6. Write your answer as a single-digit number: **4**
7. Write your answer as a single-digit number: **4**
8. Write your answer as a single-digit number: **2**
9. Write your answer as a single-digit number: **2**
10. Write your answer as a single-digit number: **2**
11. Write your answer as a three-digit number: **312**

Selected cases in bold.

Simple			Stratified		
ID	Sex	RN	ID	Sex	RN
5	M	0.0279	5	M	0.0279
10	M	0.0325	10	M	0.0325
11	F	0.0346	2	M	0.1196
2	M	0.1196	1	M	0.1822
14	F	0.1675	3	M	0.2598
1	M	0.1822	6	M	0.3025
3	M	0.2598	7	M	0.4308
6	M	0.3025	4	M	0.4594
19	F	0.3676	8	M	0.6663
15	F	0.4039	9	M	0.7921
7	M	0.4308	11	F	0.0346
4	M	0.4594	14	F	0.1675
8	M	0.6663	19	F	0.3676
20	F	0.7460	15	F	0.4039
12	F	0.7740	20	F	0.7460
9	M	0.7921	12	F	0.7740
18	F	0.7978	18	F	0.7978
17	F	0.8078	17	F	0.8078
16	F	0.8872	16	F	0.8872
13	F	0.9292	13	F	0.9292

12. Write your answer as a four-digit number: 1913

	$n = 10$	$n = 10,000$
$\mu_{\bar{X}}$	[a] 0.10	[c] 0.10
$\sigma_{\bar{X}}$	[b] 0.0949	[d] 0.0030

For $n = 10$, $\mu_{\bar{X}} = \mu = 0.10$ and $\sigma_{\bar{X}} = \sigma/\sqrt{n} = 0.30/\sqrt{10} = 0.0949$; for $n = 10,000$, $\mu_{\bar{X}} = \mu = 0.10$ and $\sigma_{\bar{X}} = \sigma/\sqrt{n} = 0.30/\sqrt{10000} = 0.0030$.

13. Write your answer as a two-digit number: 60

For $n = 10$, $\bar{X} = Z? \sigma_{\bar{X}} \mu_{\bar{X}} = 0.6745? 0.0949 \quad 0.1000 = 0.1640$; for $n = 10,000$, $\bar{X} = Z? \sigma_{\bar{X}} \mu_{\bar{X}} = 0.6745? 0.0030 \quad 0.1000 = 0.1020$.

14. Write your answer as a two-digit number: 21

Percentiles

		Percentiles				
		5	10	25	50	75
Weighted Average (Definition 1)	n_10	.0000000	.0000000	.0000000	.1000000	.2000000
	n_10K	.0949000	.0961000	.0979000	.1000000	.1019000
Tukey's Hinges	n_10			.0000000	.1000000	.2000000
	n_10K			.0979000	.1000000	.1019000

15. Write your answer as a three-digit number: 302

For $n = 10$, $|0.1640 - 0.2000| = 0.0360$; for $n = 10,000$, $|0.1020 - 0.1019| = 0.0001$.