

Problems

1.

X	f	Cum f	Cum %age
15	5	15	100.00
14	1	10	66.67
13	4	9	60.00
12	2	5	33.33
10	1	3	20.00
8	1	2	13.33
6	<u>1</u>	1	6.67
$N = 15$			

2.

X	f
4	1
3	1
2	4
1	6
0	<u>3</u>
$N = 15$	

The sample sizes are equivalent.

3. a.

X	f	X	f
37	1	22	1
33	1	21	4
31	1	20	3
30	1	19	3
29	1	18	3
28	1	17	5
27	1	16	4
26	2	15	5
25	6	14	1
24	2	12	<u>1</u>
23	3	$N = 50$	

b.

X	<i>Real Limits</i>	f	%age f
37	36.5–37.5	1	2
33	32.5–33.5	1	2
31	30.5–31.5	1	2
30	29.5–30.5	1	2
29	28.5–29.5	1	2
28	27.5–28.5	1	2
27	26.5–27.5	1	2
26	25.5–26.5	2	4
25	24.5–25.5	6	12
24	23.5–24.5	2	4
23	22.5–23.5	3	6
22	21.5–22.5	1	2
21	20.5–21.5	4	8
20	19.5–20.5	3	6
19	18.5–19.5	3	6
18	17.5–18.5	3	6
17	16.5–17.5	5	10
16	15.5–16.5	4	8
15	14.5–15.5	5	10
14	13.5–14.5	1	2
12	11.5–12.5	<u>1</u>	2

$N = 50$

4.

Apparent Limit	Real Limits
a. 25	24.5–25.5
b. 11.7	11.65–11.75
c. 12.55	12.545–12.555
d. 7.853	7.8525–7.8535

5.

X	f	Cum f	%age
f			
45	1	20	5
42	1	19	5
39	1	18	5
37	1	17	5
36	1	16	5
35	2	15	10
34	2	13	10
33	1	11	5
32	3	10	15
31	1	7	5
30	2	6	10
28	1	4	5

26	2	3	10
25	<u>1</u>	1	5

$N = 20$

6.

<u>Distribution A</u>			<u>Distribution B</u>		
<i>X</i>	<i>f</i>	%age <i>f</i>	<i>X</i>	<i>f</i>	%age <i>f</i>
79	1	1.18	79	1	3.13
77	1	1.18	78	2	6.25
76	1	1.18	77	2	6.25
74	2	2.35	76	2	6.25
65	2	2.35	75	3	9.38
64	3	3.53	74	2	6.25
62	2	2.35	73	2	6.25
60	2	2.35	71	1	3.13
57	5	5.88	70	2	6.25
56	4	4.71	69	3	9.38
54	6	7.06	68	4	12.50
53	7	8.24	65	1	3.13
52	6	7.06	60	1	3.13
51	7	8.24	58	2	6.25
50	10	11.76	55	1	3.13
49	7	8.24	50	1	3.13
48	6	7.06	44	1	3.13
47	4	4.71	39	<u>1</u>	3.13
45	2	2.35			
44	1	1.18			
42	3	3.53			
40	2	2.35			
39	<u>1</u>	1.18			
	<i>N</i> = 85			<i>N</i> = 32	

7.

<i>X</i>	Real Limits	<i>f</i>	Cum <i>f</i>	Cum %age
49	48.5–49.5	1	169	100.00
48	47.5–48.5	6	168	99.41
47	46.5–47.5	6	162	95.86
46	45.5–46.5	11	156	92.31
45	44.5–45.5	13	145	85.80
44	43.5–44.5	16	132	78.11
43	42.5–43.5	8	116	68.64
42	41.5–42.5	15	108	63.91
41	40.5–41.5	16	93	55.03
40	39.5–40.5	13	77	45.56
39	38.5–39.5	9	64	37.87
38	37.5–38.5	5	55	32.54
37	36.5–37.5	3	50	29.59
36	35.5–36.5	7	47	27.81
35	34.5–35.5	8	40	23.67
34	33.5–34.5	3	32	18.93

X	Real Limits	f	Cum f	Cum %age
33	32.5–33.5	1	29	17.16
32	31.5–32.5	7	28	16.57
31	30.5–31.5	3	21	12.43
30	29.5–30.5	4	18	10.65
29	28.5–29.5	3	14	8.28
28	27.5–28.5	4	11	6.51
27	26.5–27.5	1	7	4.14
26	25.5–26.5	3	6	3.55
25	24.5–25.5	2	3	1.78
23	22.5–23.5	<u>1</u>	1	0.59

$N = 169$