

Статистический ряд. Мат.ожидание

Дана числовая выборка a_1, a_2, \dots, a_n . Построить группированный статистический ряд абсолютных частот из 6 членов. Найти выборочное среднее и дисперсии негруппированной выборки \bar{a} и группированной \bar{x} .¹

Задача 24.1. *Алешин Владислав*

8, 132, 114, 20, 112, 102, 26, 100, 93, 38, 91, 84, 47, 79, 72, 56, 70, 66, 68, 61, 54, 77, 49, 45, 89, 43, 33, 95, 31, 24, 107, 22, 15, 116, 10, 3,

Задача 24.2. *Андреев Данил*

Романович

4, 106, 90, 8, 84, 82, 20, 80, 72, 26, 71, 64, 34, 63, 58, 44, 53, 46, 52, 45, 42, 61, 39, 33, 65, 27, 25, 77, 23, 15, 83, 14, 7, 91, 6, 1,

Задача 24.3. *Власов Владимир*

109, 6, 4, 88, 16, 14, 78, 22, 21, 73, 32, 30, 66, 39, 37, 57, 48, 42, 50, 55, 52, 40, 60, 58, 34, 70, 68, 24, 76, 75, 19, 86, 84, 12, 93, 91,

Задача 24.4. *Глазков Никита*

10, 204, 181, 23, 175, 168, 41, 162, 148, 56, 143, 132, 72, 130, 117, 92, 110, 99, 105, 94, 86, 124, 79, 67, 137, 61, 54, 155, 48, 34, 170, 29, 18, 186, 16, 3,

Задача 24.5. *Гриневич Илья*

Константинович

160, 3, 1, 137, 17, 11, 123, 31, 29, 114, 41, 39, 99, 59, 54, 89, 69, 63, 71, 84, 77, 61, 93, 91, 47, 107, 101, 33, 121, 119, 24, 131, 129, 9, 149, 144,

Задача 24.6. *Ершов Никита*

Сергеевич

160, 8, 7, 132, 24, 21, 116, 34, 31, 111, 48, 42, 96, 58, 57, 85, 69, 62, 75, 84, 78, 61, 89, 88, 51, 105, 102, 35, 115, 112, 30, 129, 123, 15, 139, 138,

Задача 24.7. *Зыза Анастасия*

Олеговна

9, 174, 155, 22, 150, 142, 35, 137, 125, 48, 123, 112, 61, 110, 99, 78, 93, 86, 91, 80, 73, 105, 67, 59, 118, 54, 46, 131, 41, 29, 144, 27, 16, 157, 14, 3,

Задача 24.8. *Ирха Кирилл*

Вадимович

9, 192, 175, 26, 170, 159, 39, 153, 141, 57, 139, 129, 69, 123, 111, 87, 105, 98, 103, 93, 81, 117, 75, 67, 134, 62, 51, 147, 45, 33, 165, 31, 21, 177, 15, 3,

Задача 24.9. *Кундиус Егор*

Евгеньевич

3, 112, 93, 12, 92, 88, 21, 83, 75, 31, 73, 71, 35, 68, 61, 48, 55, 52, 53, 51, 43, 63, 41, 33, 72, 32, 28, 81, 23, 15, 91, 13, 11, 95, 8, 1,

Задача 24.10. *Луценко Петр*

Викторович

136, 7, 1, 113, 13, 12, 107, 26, 25, 95, 37, 35, 85, 50, 45, 75, 60, 57, 62, 70, 63, 51, 82, 76, 38, 88, 87, 32, 101, 100, 20, 112, 110, 10, 125, 120,

¹Афанасьев, Зими́на, Кириллов. ВМ. Спец.разд. с. 350.

<p>Задача 24.11. <i>Мазур Илья Викторович</i></p> <p>184, 6, 1, 159, 19, 13, 146, 36, 31, 130, 48, 47, 117, 66, 60, 101, 82, 76, 83, 95, 89, 71, 111, 106, 54, 124, 118, 41, 141, 136, 25, 153, 152, 12, 171, 165,</p>	<p>Задача 24.12. <i>Нечаева Полина Игоревна</i></p> <p>2, 118, 101, 15, 99, 89, 22, 86, 82, 29, 80, 71, 40, 68, 64, 47, 61, 57, 59, 50, 44, 65, 43, 38, 78, 36, 26, 85, 23, 19, 92, 17, 8, 103, 5, 1,</p>
<p>Задача 24.13. <i>Обухов Семен</i></p> <p>12, 172, 145, 24, 140, 135, 36, 128, 122, 50, 116, 108, 64, 106, 94, 77, 93, 82, 87, 79, 70, 99, 65, 58, 111, 53, 48, 123, 41, 35, 137, 29, 21, 151, 19, 7,</p>	<p>Задача 24.14. <i>Плеханов Артем</i></p> <p>130, 3, 1, 107, 11, 8, 99, 25, 19, 89, 32, 30, 78, 43, 41, 67, 54, 51, 56, 65, 59, 49, 75, 73, 35, 83, 80, 27, 97, 91, 17, 104, 102, 6, 115, 113,</p>
<p>Задача 24.15. <i>Селиванов Александр Михайлович</i></p> <p>185, 4, 2, 163, 23, 17, 144, 37, 32, 134, 52, 46, 116, 67, 64, 102, 81, 74, 87, 99, 93, 72, 109, 107, 58, 128, 122, 39, 142, 137, 29, 157, 151, 11, 172, 169,</p>	<p>Задача 24.16. <i>Ступак Александра Алексеевна</i></p> <p>172, 4, 1, 152, 20, 15, 136, 34, 29, 121, 48, 42, 108, 62, 55, 95, 75, 70, 81, 88, 86, 67, 103, 100, 53, 119, 114, 37, 133, 128, 22, 147, 141, 9, 161, 154,</p>
<p>Задача 24.17. <i>Сухов Александр</i></p> <p>8, 196, 174, 20, 168, 162, 38, 156, 144, 54, 137, 128, 70, 125, 112, 88, 107, 94, 100, 91, 82, 119, 75, 63, 131, 57, 51, 149, 45, 33, 165, 26, 17, 181, 14, 1,</p>	<p>Задача 24.18. <i>Терехова Маргарита</i></p> <p>124, 6, 1, 101, 13, 11, 94, 23, 21, 80, 33, 31, 75, 43, 36, 65, 53, 50, 55, 58, 57, 45, 72, 67, 35, 79, 77, 28, 89, 87, 14, 99, 97, 9, 109, 102,</p>
<p>Задача 24.19. <i>Фернанду Марселину Жулиу</i></p> <p>124, 7, 1, 106, 14, 12, 99, 24, 18, 85, 35, 32, 78, 41, 39, 64, 55, 53, 58, 62, 60, 47, 76, 70, 37, 83, 81, 30, 93, 87, 16, 104, 101, 9, 110, 108,</p>	<p>Задача 24.20. <i>Хименес Мендиета Хулио Сэсар</i></p> <p>166, 3, 1, 138, 14, 8, 127, 32, 27, 114, 39, 36, 98, 58, 52, 89, 67, 65, 70, 83, 76, 63, 96, 94, 45, 107, 101, 34, 125, 120, 21, 132, 129, 5, 151, 145,</p>
<p>Задача 24.21. <i>Шаповалов Андрей Евгеньевич</i></p> <p>148, 6, 1, 129, 21, 15, 114, 28, 25, 104, 42, 40, 94, 52, 50, 79, 67, 60, 69, 77, 75, 55, 87, 82, 48, 102, 96, 33, 109, 106, 23, 123, 121, 13, 133, 131,</p>	<p>Задача 24.22. <i>Шаповалова Мария Евгеньевна</i></p> <p>9, 144, 126, 21, 125, 116, 29, 113, 101, 41, 100, 93, 49, 90, 81, 64, 75, 73, 74, 67, 61, 87, 55, 48, 99, 47, 38, 107, 35, 23, 119, 22, 15, 127, 12, 3,</p>

№	n_k^*, x_k^*	h	sum	\bar{a}	\bar{x}	D_a	D_x	
1	7, 6, 6, 7, 7, 4, 13.75, 35.25, 56.75, 78.25, 99.75, 121.25,	21.5	2252	62.56	66.09	1252.83	1329.8	Алешин Владислав
2	7, 7, 7, 6, 7, 3, 9.75, 27.25, 44.75, 62.25, 79.75, 97.25,	17.5	1711	47.53	49.88	844.6	826.79	Андреев Данил Романович
3	7, 7, 7, 7, 7, 2, 12.75, 30.25, 47.75, 65.25, 82.75, 100.25,	17.5	1829	50.8	52	781.93	763.57	Власов Владимир
4	7, 6, 6, 7, 7, 4, 19.75, 53.25, 86.75, 120.25, 153.75, 187.25,	33.5	3529	98.03	101.26	3316.31	3228.21	Глазков Никита
5	6, 7, 7, 6, 7, 4, 14.25, 40.75, 67.25, 93.75, 120.25, 146.75,	26.5	2730	75.83	81.3	2101.86	1962.94	Гриневич Илья Константинович
6	7, 7, 6, 6, 7, 3, 19.75, 45.25, 70.75, 96.25, 121.75, 147.25,	25.5	2730	75.83	79.09	1748.14	1766.28	Ершов Никита Сергеевич
7	7, 6, 6, 7, 7, 4, 17.25, 45.75, 74.25, 102.75, 131.25, 159.75,	28.5	3014	83.72	83.75	2364.5	2320.71	Зыза Анастасия Олеговна
8	7, 5, 6, 7, 7, 5, 18.75, 50.25, 81.75, 113.25, 144.75, 176.25,	31.5	3402	94.5	98.9	2980.14	2989.67	Ирха Кирилл Вадимович
9	7, 7, 7, 7, 7, 2, 10.25, 28.75, 47.25, 65.75, 84.25, 102.75,	18.5	1827	50.75	51.65	933.96	853.06	Кундиус Егор Евгеньевич
10	6, 7, 6, 6, 7, 3, 12.25, 34.75, 57.25, 79.75, 102.25, 124.75,	22.5	2326	64.61	64.13	1454.3	1296.56	Луценко Петр Викторович
11	7, 6, 6, 6, 7, 4, 16.25, 46.75, 77.25, 107.75, 138.25, 168.75,	30.5	3169	88.03	87.42	2815.17	2657.86	Мазур Илья Викторович
12	7, 7, 6, 6, 6, 4, 10.75, 30.25, 49.75, 69.25, 88.75, 108.25,	19.5	1923	53.42	56	1051.4	1075.93	Нечаева Полина Игоревна
13	6, 7, 7, 7, 6, 3, 20.75, 48.25, 75.75, 103.25, 130.75, 158.25,	27.5	2937	81.58	82.63	2000.82	1874.42	Обухов Семен
14	7, 7, 6, 6, 7, 3, 11.75, 33.25, 54.75, 76.25, 97.75, 119.25,	21.5	2135	59.3	59.53	1338.5	1244.4	Плеханов Артем
15	7, 5, 7, 6, 6, 5, 17.25, 47.75, 78.25, 108.75, 139.25, 169.75,	30.5	3225	89.58	90.11	2836.82	2725.78	Селиванов Александр Михайлович
16	7, 6, 6, 6, 6, 5, 15.25, 43.75, 72.25, 100.75, 129.25, 157.75,	28.5	2982	82.83	82.54	2500.14	2420.63	Ступак Александра Алексеевна
17	7, 6, 6, 7, 7, 5, 17.25, 49.75, 82.25, 114.75, 147.25, 179.75,	32.5	3381	93.92	97.17	3143.1	3167.07	Сухов Александр
18	7, 6, 7, 7, 7, 2, 11.25, 31.75, 52.25, 72.75, 93.25, 113.75,	20.5	2039	56.64	56.24	1135.84	1028.28	Терехова Маргарита
19	7, 7, 6, 6, 6, 5, 11.25, 31.75, 52.25, 72.75, 93.25, 113.75,	20.5	2119	58.86	60.53	1211.84	1276.88	Фернанду Марселину Жулиу
20	7, 6, 7, 6, 7, 3, 14.75, 42.25, 69.75, 97.25, 124.75, 152.25,	27.5	2731	75.86	76.63	2242.7	2004.06	Хименес Мендиета Хулио Сэсар
21	7, 6, 6, 7, 7, 4, 13.25, 37.75, 62.25, 86.75, 111.25, 135.75,	24.5	2558	71.06	72.83	1700.68	1726.51	Шаповалов Андрей Евгеньевич
22	7, 7, 5, 6, 7, 4, 14.75, 38.25, 61.75, 85.25, 108.75, 132.25,	23.5	2489	69.14	68.93	1564.98	1603.72	Шаповалова Мария Евгеньевна

i-24 файл 24bmmWA

1	3,8,10,15,20,22,24;; 26,31,33,38,43,45;; 47,49,54,56,61,66;; 68,70,72,77,79,84,89;; 89,91,93,95,100,102,107;; 112,114,116,132;;
2	1,4,6,7,8,14,15;; 20,23,25,26,27,33,34;; 39,42,44,45,46,52,53;; 58,61,63,64,65,71;; 71,72,77,80,82,83,84;; 90,91,106;;
3	4,6,12,14,16,19,21;; 22,24,30,32,34,37,39;; 39,40,42,48,50,52,55;; 57,58,60,66,68,70,73;; 75,76,78,84,86,88,91;; 93,109;;
4	3,10,16,18,23,29,34;; 41,48,54,56,61,67;; 72,79,86,92,94,99;; 105,110,117,124,130,132,137;; 137,143,148,155,162,168,170;; 175,181,186,204;;
5	1,3,9,11,17,24;; 29,31,33,39,41,47,54;; 54,59,61,63,69,71,77;; 84,89,91,93,99,101,107;; 107,114,119,121,123,129,131;; 137,144,149,160;;
6	7,8,15,21,24,30,31;; 34,35,42,48,51,57,58;; 58,61,62,69,75,78;; 84,85,88,89,96,102,105;; 111,112,115,116,123,129,132;; 138,139,160;;
7	3,9,14,16,22,27,29;; 35,41,46,48,54,59;; 61,67,73,78,80,86;; 91,93,99,105,110,112;; 118,123,125,131,137,142,144;; 150,155,157,174;;
8	3,9,15,21,26,31,33;; 39,45,51,57,62;; 67,69,75,81,87,93;; 98,103,105,111,117,123,129;; 129,134,139,141,147,153,159;; 165,170,175,177,192;;
9	1,3,8,11,12,13,15;; 21,23,28,31,32,33,35;; 41,43,48,51,52,53,55;; 61,63,68,71,72,73,75;; 75,81,83,88,91,92,93;; 95,112;;
10	1,7,10,12,13,20;; 25,26,32,35,37,38,45;; 50,51,57,60,62,63;; 70,75,76,82,85,87,88;; 95,100,101,107,110,112,113;; 120,125,136;;
11	1,6,12,13,19,25,31;; 36,41,47,48,54,60;; 66,71,76,82,83,89;; 95,101,106,111,117,118;; 124,130,136,141,146,152,153;; 159,165,171,184;;
12	1,2,5,8,15,17,19;; 22,23,26,29,36,38,40;; 40,43,44,47,50,57,59;; 61,64,65,68,71,78;; 80,82,85,86,89,92;; 99,101,103,118;;
13	7,12,19,21,24,29;; 35,36,41,48,50,53,58;; 64,65,70,77,79,82,87;; 93,94,99,106,108,111,116;; 122,123,128,135,137,140;; 145,151,172;;
14	1,3,6,8,11,17,19;; 25,27,30,32,35,41,43;; 49,51,54,56,59,65;; 67,73,75,78,80,83;; 89,91,97,99,102,104,107;; 113,115,130;;
15	2,4,11,17,23,29,32;; 37,39,46,52,58;; 64,67,72,74,81,87,93;; 99,102,107,109,116,122;; 128,134,137,142,144,151;; 157,163,169,172,185;;
16	1,4,9,15,20,22,29;; 34,37,42,48,53,55;; 62,67,70,75,81,86;; 88,95,100,103,108,114;; 119,121,128,133,136,141;; 147,152,154,161,172;;
17	1,8,14,17,20,26,33;; 38,45,51,54,57,63;; 70,75,82,88,91,94;; 100,107,112,119,125,128,131;; 131,137,144,149,156,162;; 165,168,174,181,196;;