

Задание на РГЗ

"СТАТИСТИЧЕСКИЕ МЕТОДЫ ОБРАБОТКИ ЭКСПЕРИМЕНТАЛЬНЫХ ДАННЫХ"

Для одномерной выборки X :

- 1) Составить вариационный ряд
- 2) Выбрать нужное число интервалов по формуле Стерджесса и построить сгруппированный статистический ряд.
- 3) Построить гистограмму, полигон частот, эмпирическую функцию распределения
- 4) Вычислить выборочные числовые характеристики:
 \bar{X} , $D^*(X)$, $S(X)$, $Mo(X)$, $Me(X)$
- 5) Выдвинуть гипотезу о том, что выборка извлечена из нормальной генеральной совокупности, и проверить её с помощью критерия Пирсона, выбрав уровень значимости $\alpha = 0.1$
- 6) Считая, что генеральная совокупность имеет нормальное распределение, найти доверительные интервалы для математического ожидания и дисперсии с уровнем значимости $\alpha = 0.1$

Вариант 1

53, 44, 50, 49, 45, 48, 50, 47, 47, 48, 52, 49, 49, 47, 51, 48, 46, 46, 50, 48, 49, 45, 45, 50, 48, 46, 49, 47, 47, 45, 48, 47, 50, 50, 45, 47, 46, 47, 46, 48, 49, 49, 50, 44, 48, 45, 47, 51, 47, 46, 48, 51, 49, 46, 52.

Вариант 2

42, 33, 39, 38, 34, 37, 39, 36, 36, 34, 41, 38, 38, 36, 40, 37, 35, 35, 39, 37, 38, 34, 34, 39, 37, 35, 39, 36, 36, 34, 37, 36, 39, 39, 34, 36, 35, 36, 35, 37, 38, 38, 39, 33, 37, 34, 36, 40, 36, 35, 37, 40, 38, 35, 41

Вариант 3

31, 22, 28, 27, 23, 26, 28, 25, 25, 26, 30, 27, 27, 25, 29, 26, 24, 24, 28, 26, 27, 23, 23, 28, 26, 24, 27, 25, 25, 23, 26, 25, 28, 28, 23, 25, 24, 25, 24, 26, 27, 27, 28, 22, 26, 23, 25, 29, 25, 24, 26, 29, 27, 24, 30.

Вариант 4

59, 50, 56, 55, 54, 54, 56, 53, 53, 54, 58, 55, 55, 53, 57, 54, 52, 52, 56, 54, 55, 51, 51, 56, 54, 52, 55, 53, 53, 51, 54, 53, 56, 56, 51, 53, 54, 53, 54, 54, 55, 55, 56, 50, 54, 51, 53, 57, 53, 52, 54, 57, 55, 52, 58.

Вариант 5

33, 24, 30, 29, 25, 28, 30, 27, 27, 28, 32, 29, 29, 27, 31, 28, 26, 26, 30, 28, 29, 25, 25, 30, 28, 26, 29, 27, 27, 25, 28, 27, 30, 30, 25, 27, 26, 27, 26, 28, 29, 29, 30, 24, 28, 25, 27, 31, 27, 26, 28, 31, 29, 26, 32.

Вариант 6

23, 14, 20, 19, 15, 18, 20, 17, 17, 18, 22, 19, 19, 17, 21, 18, 16, 16, 20, 18, 19, 15, 15, 20, 18, 16, 19, 17, 17, 15, 18, 17, 20, 20, 15, 17, 16, 17, 16, 18, 19, 19, 20, 14, 18, 15, 17, 21, 17, 16, 18, 21, 19, 16, 22.

Вариант 7

68, 59, 65, 64, 60, 63, 65, 62, 62, 63, 65, 64, 64, 62, 66, 63, 61, 61, 65, 63, 64, 60, 60, 65, 63, 61, 64, 62, 62, 60, 63, 62, 65, 65, 60, 62, 61, 62, 61, 63, 64, 64, 65, 59, 63, 60, 62, 66, 62, 61, 63, 66, 65, 61, 67.

Вариант 8

44, 35, 41, 40, 36, 39, 41, 38, 38, 39, 43, 40, 40, 39, 42, 39, 37, 37, 41, 39, 40, 36, 36, 41, 39, 37, 40, 39, 39, 36, 39, 38, 41, 41, 36, 36, 37, 38, 37, 37, 40, 40, 41, 35, 39, 36, 39, 42, 39, 37, 39, 42, 40, 37, 43.

Вариант 9

73, 74, 70, 69, 65, 68, 70, 67, 67, 68, 72, 69, 69, 67, 71, 68, 66, 66, 70, 68, 69, 65, 65, 70, 68, 66, 69, 67, 67, 65, 68, 67, 70, 70, 65, 67, 66, 67, 66, 68, 66, 70, 64, 68, 68, 65, 67, 71, 67, 66, 68, 71, 69, 66, 72.

Вариант 10

57, 48, 54, 53, 49, 52, 54, 51, 51, 52, 56, 53, 53, 51, 55, 52, 50, 50, 54, 52, 53, 49, 49, 54, 52, 50, 53, 51, 51, 49, 52, 51, 54, 54, 49, 51, 50, 51, 50, 52, 53, 53, 54, 48, 52, 49, 51, 55, 51, 50, 52, 55, 53, 50, 56.

Вариант 11

53, 44, 50, 49, 45, 48, 50, 47, 47, 48, 52, 49, 49, 47, 51, 48, 46, 46, 50, 48, 49, 45, 45, 50, 48, 46, 49, 47, 47, 45, 48, 47, 50, 50, 45, 47, 46, 47, 46, 48, 49, 49, 50, 44, 48, 45, 47, 51, 47, 46, 48, 51, 49, 46, 52.

Вариант 12

42, 33, 39, 38, 34, 37, 39, 36, 36, 34, 41, 38, 38, 36, 40, 37, 35, 35, 39, 37, 38, 34, 34, 39, 37, 35, 39, 36, 36, 34, 37, 36, 39, 39, 34, 36, 35, 36, 35, 37, 38, 38, 39, 33, 37, 34, 36, 40, 36, 35, 37, 40, 38, 35, 41

Вариант 13

31, 22, 28, 27, 23, 26, 28, 25, 25, 26, 30, 27, 27, 25, 29, 26, 24, 24, 28, 26, 27, 23, 23, 28, 26, 24, 27, 25, 25, 23, 26, 25, 28, 28, 23, 25, 24, 25, 24, 26, 27, 27, 28, 22, 26, 23, 25, 29, 25, 24, 26, 29, 27, 24, 30.

Вариант 14

59, 50, 56, 55, 54, 54, 56, 53, 53, 54, 58, 55, 55, 53, 57, 54, 52, 52, 56, 54, 55, 51, 51, 56, 54, 52, 55, 53, 53, 51, 54, 53, 56, 56, 51, 53, 54, 53, 54, 54, 55, 55, 56, 50, 54, 51, 53, 57, 53, 52, 54, 57, 55, 52, 58.

Вариант 15

33, 24, 30, 29, 25, 28, 30, 27, 27, 28, 32, 29, 29, 27, 31, 28, 26, 26, 30, 28, 29, 25, 25, 30, 28, 26, 29, 27, 27, 25, 28, 27, 30, 30, 25, 27, 26, 27, 26, 28, 29, 29, 30, 24, 28, 25, 27, 31, 27, 26, 28, 31, 29, 26, 32.

Вариант 16

23, 14, 20, 19, 15, 18, 20, 17, 17, 18, 22, 19, 19, 17, 21, 18, 16, 16, 20, 18, 19, 15, 15, 20, 18, 16, 19, 17, 17, 15, 18, 17, 20, 20, 15, 17, 16, 17, 16, 18, 19, 19, 20, 14, 18, 15, 17, 21, 17, 16, 18, 21, 19, 16, 22.

Вариант 17

68, 59, 65, 64, 60, 63, 65, 62, 62, 63, 65, 64, 64, 62, 66, 63, 61, 61, 65, 63, 64, 60, 60, 65, 63, 61, 64, 62, 62, 60, 63, 62, 65, 65, 60, 62, 61, 62, 61, 63, 64, 64, 65, 59, 63, 60, 62, 66, 62, 61, 63, 66, 65, 61, 67.

Вариант 18

44, 35, 41, 40, 36, 39, 41, 38, 38, 39, 43, 40, 40, 39, 42, 39, 37, 37, 41, 39, 40, 36, 36, 41, 39, 37, 40, 39, 39, 36, 39, 38, 41, 41, 36, 36, 37, 38, 37, 37, 40, 40, 41, 35, 39, 36, 39, 42, 39, 37, 39, 42, 40, 37, 43.

Вариант 19

73, 74, 70, 69, 65, 68, 70, 67, 67, 68, 72, 69, 69, 67, 71, 68, 66, 66, 70, 68, 69, 65, 65, 70, 68, 66, 69, 67, 67, 65, 68, 67, 70, 70, 65, 67, 66, 67, 66, 68, 66, 70, 64, 68, 68, 65, 67, 71, 67, 66, 68, 71, 69, 66, 72.

Вариант 20

57, 48, 54, 53, 49, 52, 54, 51, 51, 52, 56, 53, 53, 51, 55, 52, 50, 50, 54, 52, 53, 49, 49, 54, 52, 50, 53, 51, 51, 49, 52, 51, 54, 54, 49, 51, 50, 51, 50, 52, 53, 53, 54, 48, 52, 49, 51, 55, 51, 50, 52, 55, 53, 50, 56.

Вариант 21

53, 44, 50, 49, 45, 48, 50, 47, 47, 48, 52, 49, 49, 47, 51, 48, 46, 46, 50, 48, 49, 45, 45, 50, 48, 46, 49, 47, 47, 45, 48, 47, 50, 50, 45, 47, 46, 47, 46, 48, 49, 49, 50, 44, 48, 45, 47, 51, 47, 46, 48, 51, 49, 46, 52.

Вариант 22

42, 33, 39, 38, 34, 37, 39, 36, 36, 34, 41, 38, 38, 36, 40, 37, 35, 35, 39, 37, 38, 34, 34, 39, 37, 35, 39, 36, 36, 34, 37, 36, 39, 39, 34, 36, 35, 36, 35, 37, 38, 38, 39, 33, 37, 34, 36, 40, 36, 35, 37, 40, 38, 35, 41

Вариант 23

31, 22, 28, 27, 23, 26, 28, 25, 25, 26, 30, 27, 27, 25, 29, 26, 24, 24, 28, 26, 27, 23, 23, 28, 26, 24, 27, 25, 25, 23, 26, 25, 28, 28, 23, 25, 24, 25, 24, 26, 27, 27, 28, 22, 26, 23, 25, 29, 25, 24, 26, 29, 27, 24, 30.

Вариант 24

59, 50, 56, 55, 54, 54, 56, 53, 53, 54, 58, 55, 55, 53, 57, 54, 52, 52, 56, 54, 55, 51, 51, 56, 54, 52, 55, 53, 53, 51, 54, 53, 56, 56, 51, 53, 54, 53, 54, 54, 55, 55, 56, 50, 54, 51, 53, 57, 53, 52, 54, 57, 55, 52, 58.

Вариант 25

33, 24, 30, 29, 25, 28, 30, 27, 27, 28, 32, 29, 29, 27, 31, 28, 26, 26, 30, 28, 29, 25, 25, 30, 28, 26, 29, 27, 27, 25, 28, 27, 30, 30, 25, 27, 26, 27, 26, 28, 29, 29, 30, 24, 28, 25, 27, 31, 27, 26, 28, 31, 29, 26, 32.

Вариант 26

23, 14, 20, 19, 15, 18, 20, 17, 17, 18, 22, 19, 19, 17, 21, 18, 16, 16, 20, 18, 19, 15, 15, 20, 18, 16, 19, 17, 17, 15, 18, 17, 20, 20, 15, 17, 16, 17, 16, 18, 19, 19, 20, 14, 18, 15, 17, 21, 17, 16, 18, 21, 19, 16, 22.

Вариант 27

68, 59, 65, 64, 60, 63, 65, 62, 62, 63, 65, 64, 64, 62, 66, 63, 61, 61, 65, 63, 64, 60, 60, 65, 63, 61, 64, 62, 62, 60, 63, 62, 65, 65, 60, 62, 61, 62, 61, 63, 64, 64, 65, 59, 63, 60, 62, 66, 62, 61, 63, 66, 65, 61, 67.

Вариант 28

44, 35, 41, 40, 36, 39, 41, 38, 38, 39, 43, 40, 40, 39, 42, 39, 37, 37, 41, 39, 40, 36, 36, 41, 39, 37, 40, 39, 39, 36, 39, 38, 41, 41, 36, 36, 37, 38, 37, 37, 40, 40, 41, 35, 39, 36, 39, 42, 39, 37, 39, 42, 40, 37, 43.

Вариант 29

73, 74, 70, 69, 65, 68, 70, 67, 67, 68, 72, 69, 69, 67, 71, 68, 66, 66, 70, 68, 69, 65, 65, 70, 68, 66, 69, 67, 67, 65, 68, 67, 70, 70, 65, 67, 66, 67, 66, 68, 66, 70, 64, 68, 68, 65, 67, 71, 67, 66, 68, 71, 69, 66, 72.

Вариант 30

57, 48, 54, 53, 49, 52, 54, 51, 51, 52, 56, 53, 53, 51, 55, 52, 50, 50, 54, 52, 53, 49, 49, 54, 52, 50, 53, 51, 51, 49, 52, 51, 54, 54, 49, 51, 50, 51, 50, 52, 53, 53, 54, 48, 52, 49, 51, 55, 51, 50, 52, 55, 53, 50, 56.