Проверка гипотезы однородности выборок по Вилкоксону

При уровне значимости α проверить гипотезу об однородностидвух выборок[1]

Задача 48.1. *Алексахин Антон*
$x_i = 8, 16, 20, 28, 32, 36$
$y_i = 4, 12, 24, 40, 44, 48, 52, 56$
$Q = \alpha/2 = 0.050$

Задача 48.2. *Балов Артём Игоревич*
$x_i = 4, 5, 6, 8, 10, 11$
$y_i = 7, 9, 12, 13, 14, 15, 16,$
$Q = \alpha/2 = 0.025$

Задача 48.3. *Белоусов Георгий Михайлович*
$x_i = 6, 10, 12, 16, 18, 20$
$y_i = 4, 8, 14, 22, 24, 26, 28, 30$
$Q = \alpha/2 = 0.050$

Задача 48.4. *Бондаренко Андрей*
$x_i = 4, 12, 20, 24, 28, 32$
$y_i = 8, 16, 36, 40, 44, 48, 52,$
$Q = \alpha/2 = 0.005$

Задача 48.5. *Гильманов Булат Наильевич*
$x_i = 3, 7, 11, 15, 17, 19$
$y_i = 1, 5, 9, 13, 21, 23, 25, 27$
$Q = \alpha/2 = 0.010$

Задача 48.6. *Егоров Всеволод Кириллович*
$x_i = 8, 12, 16, 20, 22, 24$
$y_i = 4, 6, 10, 14, 18, 26, 28, 30$
$Q = \alpha/2 = 0.010$

Задача 48.7. *Журавлева Анастасия*
$x_i = 10, 13, 16, 22, 25, 28$
$y_i = 4, 7, 19, 31, 34, 37, 40, 43$
$Q = \alpha/2 = 0.005$

Задача 48.8. *Зубрильчев Даниил*
$x_i = 9, 12, 18, 21, 27, 30$
$y_i = 3, 6, 15, 24, 33, 36, 39, 42$
$Q = \alpha/2 = 0.050$

Задача 48.9. *Изотов Роман Игоревич*
$x_i = 12, 16, 24, 28, 36, 40$
$y_i = 4, 8, 20, 32, 44, 48, 52, 56$
$Q = \alpha/2 = 0.005$

Задача 48.10. *Луканин Александр Сергеевич*
$x_i = 10, 14, 22, 26, 34, 38$
$y_i = 2, 6, 18, 30, 42, 46, 50, 54$
$Q = \alpha/2 = 0.025$

Задача 48.11. *Семенов Дмитрий Сергеевич*
$x_i = 3, 9, 12, 18, 21, 24$
$y_i = 6, 15, 27, 30, 33, 36, 39,$
$Q = \alpha/2 = 0.050$

Задача 48.12. *Степанова Светлана*
$x_i = 6, 9, 15, 18, 24, 27$
$y_i = 3, 12, 21, 30, 33, 36, 39,$
$Q = \alpha/2 = 0.050$

Задача 48.13. *Уткин Артем Евгеньевич*
$x_i = 4, 6, 8, 10, 12, 13$
$y_i = 5, 7, 9, 11, 14, 15, 16,$
$Q = \alpha/2 = 0.010$

Задача 48.14. *Храпов Иван Николаевич*
$x_i = 5, 8, 11, 17, 20, 23$
$y_i = 2, 14, 26, 29, 32, 35, 38,$
$Q = \alpha/2 = 0.010$

[1] Гмурман В.Е. Руководство к решению задач по теории вероятностей и математической статистике. М.:1969. с. 248.

Задача 48.15. *Чернышев Егор Вадимович*

$x_i = 6, 8, 12, 16, 20, 22$
$y_i = 2, 4, 10, 14, 18, 24, 26, 28$
$Q = \alpha/2 = 0.025$

Задача 48.16.

$x_i = 3, 4, 5, 6, 8, 10$
$y_i = 7, 9, 11, 12, 13, 14, 15,$
$Q = \alpha/2 = 0.050$

Задача 48.17.

$x_i = 7, 11, 19, 23, 31, 35$
$y_i = 3, 15, 27, 39, 43, 47, 51, 55$
$Q = \alpha/2 = 0.025$

Задача 48.18.

$x_i = 5, 7, 11, 15, 17, 19$
$y_i = 3, 9, 13, 21, 23, 25, 27, 29$
$Q = \alpha/2 = 0.005$

Задача 48.19.

$x_i = 3, 7, 9, 11, 15, 17$
$y_i = 1, 5, 13, 19, 21, 23, 25, 27$
$Q = \alpha/2 = 0.050$

Задача 48.20.

$x_i = 4, 6, 7, 8, 9, 11$
$y_i = 3, 5, 10, 12, 13, 14, 15,$
$Q = \alpha/2 = 0.025$

Задача 48.21.

$x_i = 6, 12, 18, 24, 30, 33$
$y_i = 3, 9, 15, 21, 27, 36, 39,$
$Q = \alpha/2 = 0.050$

Задача 48.22.

$x_i = 8, 16, 20, 24, 28, 36$
$y_i = 4, 12, 32, 40, 44, 48, 52, 56$
$Q = \alpha/2 = 0.050$

Задача 48.23.

$x_i = 5, 11, 14, 17, 20, 23$
$y_i = 2, 8, 26, 29, 32, 35, 38,$
$Q = \alpha/2 = 0.010$

Задача 48.24.

$x_i = 2, 8, 11, 17, 20, 26$
$y_i = 5, 14, 23, 29, 32, 35, 38,$
$Q = \alpha/2 = 0.010$

Задача 48.25.

$x_i = 5, 7, 9, 11, 15, 17$
$y_i = 1, 3, 13, 19, 21, 23, 25, 27$
$Q = \alpha/2 = 0.025$

Задача 48.26.

$x_i = 1, 2, 3, 5, 6, 7$
$y_i = 4, 8, 9, 10, 11, 12, 13,$
$Q = \alpha/2 = 0.050$