Проверка гипотезы о нормальном распределении по Пирсону

Проверить, согласуется ли при уровне значимости α гипотеза о нормальном распределении совокупности X с эмпирическим распределением. [1]

Задача L-50.1. *Ахметов Данис*

$x_i = [8, 13, 18, 23, 28, 33, 38, 43]$

$n_i = [8, 13, 16, 17, 16, 12, 7, 8]$

$\alpha = 0.990.$

Задача L-50.2. *Васильков Илья*

$x_i = [6, 9, 12, 15, 18, 21, 24, 27]$

$n_i = [8, 13, 15, 17, 16, 13, 7, 8]$

$\alpha = 0.950.$

Задача L-50.3. *Васильченко Данил*

$x_i = [5, 7, 9, 11, 13, 15, 17, 19]$

$n_i = [8, 14, 16, 16, 15, 12, 7, 11]$

$\alpha = 0.025.$

Задача L-50.4. *Егоров Сергей*

$x_i = [5, 7, 9, 11, 13, 15, 17, 19, 21]$

$n_i = [8, 15, 19, 20, 19, 18, 14, 8, 4]$

$\alpha = 0.025.$

Задача L-50.5. *Жуков Андрей*

$x_i = [5, 7, 9, 11, 13, 15, 17, 19]$

$n_i = [9, 13, 16, 16, 15, 13, 7, 9]$

$\alpha = 0.010.$

Задача L-50.6. *Иванова Дарья*

$x_i = [8, 13, 18, 23, 28, 33, 38, 43, 48]$

$n_i = [9, 16, 18, 21, 20, 19, 14, 8, 8]$

$\alpha = 0.950.$

Задача L-50.7. *Компанеец Кирилл*

$x_i = [6, 9, 12, 15, 18, 21, 24, 27, 30]$

$n_i = [9, 14, 18, 20, 21, 19, 15, 8, 2]$

$\alpha = 0.010.$

Задача L-50.8. *Овчаренко Ульяна*

$x_i = [9, 15, 21, 27, 33, 39, 45, 51, 57]$

$n_i = [8, 14, 19, 21, 20, 19, 14, 8, 8]$

$\alpha = 0.950.$

Задача L-50.9. *Петриченко Елизавета*

$x_i = [7, 11, 15, 19, 23, 27, 31, 35, 39]$

$n_i = [10, 15, 20, 20, 21, 20, 14, 8, 6]$

$\alpha = 0.050.$

Задача L-50.10. *Разананирина Ранди*

$x_i = [6, 9, 12, 15, 18, 21, 24, 27]$

$n_i = [9, 12, 16, 17, 16, 14, 7, 3]$

$\alpha = 0.990.$

Задача L-50.11. *Скулова Полина*

$x_i = [6, 9, 12, 15, 18, 21, 24, 27, 30]$

$n_i = [8, 16, 18, 21, 22, 19, 14, 8, 8]$

$\alpha = 0.975.$

Задача L-50.12. *Широков Александр*

$x_i = [7, 11, 15, 19, 23, 27, 31, 35]$

$n_i = [8, 14, 16, 18, 16, 13, 7, 10]$

$\alpha = 0.050.$

[1] Гмурман В.Е. Руководство к решению задач по теории вероятностей и математической статистике. М.:1969. с. 253.

Задача L-50.13. *Равжир Хосбаяр*

$x_i = [9, 15, 21, 27, 33, 39, 45, 51]$

$n_i = [8, 13, 16, 16, 17, 12, 7, 8]$

$\alpha = 0.025.$