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В результате обследования N образцов строительного бетона ультразвуковым способом были выявлены числа X дефектов в единице объема материала. Получены частоты этих измерений m . На уровне значимости $\alpha = 0,05$ определить, согласуются ли результаты с равномерным распределением.¹

Задача 12.1. *Алексахин Антон*

$X = [8, 11, 14, 17, 20, 23, 26, 29, 32, 35]$

$m = [19, 5, 6, 8, 20, 6, 4, 6, 5, 11]$

Задача 12.2. *Балов Артём Игоревич*

$X = [10, 11, 12, 13, 14, 15, 16, 17]$

$m = [6, 6, 6, 8, 7, 7, 4, 6]$

Задача 12.3. *Белоусов Георгий*

Михайлович

$X = [2, 3, 4, 5, 6, 7, 8, 9]$

$m = [6, 7, 7, 9, 7, 7, 4, 7]$

Задача 12.4. *Бондаренко Андрей*

$X = [4, 6, 8, 10, 12, 14, 16, 18, 20]$

$m = [14, 7, 5, 7, 17, 3, 4, 5, 4]$

Задача 12.5. *Гильманов Булат*

Наильевич

$X = [9, 10, 11, 12, 13, 14, 15, 16]$

$m = [6, 8, 8, 10, 8, 6, 6, 7]$

Задача 12.6. *Егоров Всеволод Кириллович*

$X = [2, 3, 4, 5, 6, 7, 8, 9]$

$m = [2, 6, 5, 7, 4, 2, 4, 4]$

Задача 12.7. *Журавлева Анастасия*

$X = [7, 9, 11, 13, 15, 17, 19, 21, 23]$

$m = [5, 7, 7, 9, 7, 5, 5, 5, 4]$

Задача 12.8. *Зубрильчев Даниил*

$X = [11, 14, 17, 20, 23, 26, 29, 32, 35, 38]$

$m = [17, 4, 5, 7, 18, 5, 3, 4, 6, 42]$

Задача 12.9. *Изотов Роман Игоревич*

$X = [9, 12, 15, 18, 21, 24, 27, 30, 33, 36]$

$m = [19, 7, 6, 8, 22, 6, 6, 6, 6, 11]$

Задача 12.10. *Луканин Александр*

Сергеевич

$X = [5, 8, 11, 14, 17, 20, 23, 26, 29, 32]$

$m = [19, 6, 5, 7, 20, 7, 4, 5, 6, 47]$

Задача 12.11. *Семенов Дмитрий*

Сергеевич

$X = [6, 9, 12, 15, 18, 21, 24, 27, 30, 33]$

$m = [17, 8, 4, 6, 20, 5, 5, 4, 4, 50]$

Задача 12.12. *Степанова Светлана*

$X = [7, 10, 13, 16, 19, 22, 25, 28, 31, 34]$

$m = [17, 6, 6, 8, 20, 5, 6, 3, 4, 58]$

¹Просветов Г.И. Теория вероятностей и матем. статистика. М.:Алфа-Пресс. 2015. с. 180.

Задача 12.13. *Уткин Артем Евгеньевич*

$$X = [10, 12, 14, 16, 18, 20, 22, 24, 26]$$

$$m = [5, 3, 7, 9, 6, 5, 4, 4, 3]$$

Задача 12.14. *Храпов Иван Николаевич*

$$X = [9, 12, 15, 18, 21, 24, 27, 30, 33, 36]$$

$$m = [17, 5, 6, 8, 18, 4, 4, 5, 3, 30]$$

Задача 12.15. *Чернышев Егор Вадимович*

$$X = [10, 11, 12, 13, 14, 15, 16, 17]$$

$$m = [4, 7, 6, 8, 6, 5, 4, 6]$$

Задача 12.16.

$$X = [9, 11, 13, 15, 17, 19, 21, 23, 25]$$

$$m = [14, 7, 6, 8, 17, 2, 5, 5, 5]$$

Задача 12.17.

$$X = [5, 8, 11, 14, 17, 20, 23, 26, 29, 32]$$

$$m = [17, 7, 4, 6, 19, 4, 4, 5, 5, 18]$$

Задача 12.18.

$$X = [10, 11, 12, 13, 14, 15, 16, 17]$$

$$m = [6, 8, 6, 8, 8, 6, 5, 7]$$

Задача 12.19.

$$X = [7, 9, 11, 13, 15, 17, 19, 21, 23]$$

$$m = [14, 3, 5, 7, 16, 2, 4, 3, 2]$$

Задача 12.20.

$$X = [3, 5, 7, 9, 11, 13, 15, 17, 19]$$

$$m = [7, 7, 6, 8, 8, 6, 4, 7, 6]$$

Задача 12.21.

$$X = [9, 11, 13, 15, 17, 19, 21, 23, 25]$$

$$m = [3, 5, 4, 6, 6, 2, 4, 4, 5]$$

Задача 12.22.

$$X = [8, 9, 10, 11, 12, 13, 14, 15]$$

$$m = [6, 6, 6, 8, 8, 7, 5, 5]$$

Задача 12.23.

$$X = [8, 11, 14, 17, 20, 23, 26, 29, 32, 35]$$

$$m = [19, 6, 6, 8, 22, 7, 6, 5, 5, 39]$$

Задача 12.24.

$$X = [11, 13, 15, 17, 19, 21, 23, 25, 27]$$

$$m = [5, 5, 4, 6, 7, 5, 4, 3, 6]$$

Задача 12.25.

$$X = [8, 10, 12, 14, 16, 18, 20, 22, 24]$$

$$m = [18, 4, 7, 9, 19, 7, 4, 6, 5]$$

Задача 12.26.

$$X = [11, 13, 15, 17, 19, 21, 23, 25, 27]$$

$$m = [5, 5, 6, 8, 8, 4, 6, 4, 3]$$