al-Khwarizmi, al-Jabr wa-l-Muqabala, Arabic translation

Arabic Translation

Modern LaTeX Editions of Public-Domain Mathematics Manuscripts

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<!DOCTYPE HTML PUBLIC ”-//W3C//DTD HTML 4.01//EN” ”http://www.w3.org/TR/html4/strict.dt
<html><head> <title>404 Not Found</title> </head><body> <h1>Not
Found</h1> The requested URL was not found on this server.
<hr> <address>Apache/2.4.67 (Debian) Server at ctan.math.washington.edu
Port 443</address> </body></html>

□□□□□□□□□□□□□□

[illegible]

[illegible]

[illegible] 780–850 [illegible]

[illegible]

[illegible] 200 – 820 [illegible]

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with: prepared edition enhanced This

[illegible]

of edition critical the on Based

[illegible] 1939, [illegible]

[illegible]

[illegible] 820 [illegible]

[illegible] 1359 [illegible], 1939 [illegible] 743 [illegible] 214, [illegible] 1342 [illegible].

المحتويات

[illegible]

[illegible]

[illegible]

Из предыдущих глав мы знаем, что если случайная величина имеет биномиальное распределение, то мы можем вычислить вероятность того, что в n испытаниях ровно k раз произойдет событие A. Если n достаточно большое, то вычисление этой вероятности с помощью биномиальной формулы может быть трудоемким. Распределение Пуассона позволяет приближенно вычислять такие вероятности. Оно также полезно для моделирования случайных событий, которые происходят в определенном интервале времени или пространства, таких как количество звонков в колл-центр, количество аварий на дороге, количество мутаций в ДНК:

Пусть X — случайная величина, которая может принимать только целые неотрицательные значения.

Для любого k, мы определяем p_k как вероятность того, что X принимает значение k:

- p_k — вероятность того, что X принимает значение k для всех k из множества $\{0, 1, 2, \ldots\}$.
- p_k — вероятность того, что X принимает значение k для всех k из множества $\{1, 2, \ldots\}$.
- p_k — вероятность того, что X принимает значение k для всех k из множества $\{0, 1, 2, \ldots\}$ и $\sum_{k=0}^{\infty} p_k = 1$.
- p_k — вероятность того, что X принимает значение k для всех k из множества $\{0, 1, 2, \ldots\}$ и $\sum_{k=0}^{\infty} p_k = 0$.

[illegible]: [illegible]

[illegible]

[illegible]. [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible]

[illegible]: [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] 833–813 г. — 218–198 г. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]: [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

باب 1

[illegible]

[illegible]

[illegible]

[illegible]

1.1 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]:

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	x^2	[illegible]	[illegible] x^2 [illegible]
[illegible]	x	[illegible]	[illegible] x [illegible]
[illegible]	39	[illegible]	[illegible] c [illegible]

[illegible]

[illegible]

[illegible] x [illegible] x^2.

باب 2

[illegible]

[illegible]

[illegible] [illegible] [illegible] [

[illegible] 1.2

[illegible]: [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	$x = b/a$	$ax^2 = bx$	[illegible]
[illegible]	$x = \sqrt{c/a}$	$ax^2 = c$	[illegible]
[illegible]	$x = c/b$	$bx = c$	[illegible]

[illegible]: [illegible] 1.1.2

[illegible]

[illegible]

[illegible]

[illegible]: [illegible]

$$x^2 = 5x \quad \Rightarrow \quad x = 5, \quad x^2 = 25$$
$$\tfrac{1}{3}x^2 = 4x \quad \Rightarrow \quad x^2 = 12x = 144, \quad x = 12$$
$$5x^2 = 10x \quad \Rightarrow \quad x^2 = 2x = 4, \quad x = 2$$

[illegible] ax [illegible] $ax^2 = bx$, [illegible]: [illegible] $x = 0$ [illegible] $x = b/a$. [illegible] $x \neq 0$ [illegible].

[illegible]: [illegible] 2.1.2

[illegible]

[illegible]. [illegible]: [illegible]. [illegible]: [illegible]

[illegible]

[illegible]:

$$x^2 = 9 \quad \Rightarrow \quad x = 3$$
$$5x^2 = 80 \quad \Rightarrow \quad x^2 = 16, \quad x = 4$$
$$\tfrac{1}{2}x^2 = 18 \quad \Rightarrow \quad x^2 = 36, \quad x = 6$$

$x^2 =$ [illegible] a [illegible] $ax^2 = c$ [illegible]: [illegible] c/a, [illegible] $x = \sqrt{c/a}$.

[illegible]: [illegible] 3.1.2

[illegible]

[illegible]:

$$x = 3$$
$$4x = 20 \quad \Rightarrow \quad x = 5, \quad x^2 = 25$$
$$\tfrac{1}{2}x = 10 \quad \Rightarrow \quad x = 20, \quad x^2 = 400$$

$x = c/b$ [illegible] b [illegible] $bx = c$ [illegible]: [illegible]

2.2 [illegible]

[illegible]: [illegible]

[illegible]	[illegible]	[illegible]
[illegible]	$ax^2 + bx = c$	[illegible]
[illegible]	$ax^2 + c = bx$	[illegible]
[illegible]	$bx + c = ax^2$	[illegible]

[illegible] $(x+p)^2 = q$ [illegible]

1.2.2 [illegible]

[illegible]

[illegible]

[illegible]: [illegible]

$$\boxed{x^2 + bx = c \quad \Longrightarrow \quad x = \sqrt{\left(\frac{b}{2}\right)^2 + c} - \frac{b}{2}}$$

[illegible]: $x^2 + 10x = 39 \Rightarrow x = \sqrt{25+39} - 5 = \sqrt{64} - 5 = 8 - 5 = 3$ [illegible]

[illegible]

[illegible] $x^2 + bx = c$ [illegible] $(b/2)^2$ [illegible] $x^2 + bx + (b/2)^2 =$ [illegible]:

$$c + (b/2)^2$$

[illegible] $(x + b/2)^2 = c + (b/2)^2$ [illegible]:

$$x + b/2 = \sqrt{c + (b/2)^2}$$

[illegible] $x = \sqrt{(b/2)^2 + c} - b/2$:$b/2$ [illegible]

[illegible]!

2.2.2 [illegible]: [illegible]

[illegible]

[illegible]. [illegible]: [illegible]: [illegible]: [illegible] [illegible]. [illegible]. [illegible]. [illegible]

[illegible]

[illegible]: [illegible]

$$x^2 + c = bx \quad \Longrightarrow \quad x = \frac{b}{2} \pm \sqrt{\left(\frac{b}{2}\right)^2 - c}$$

$x^2 + 21 = 10x \Rightarrow x = 5 \pm \sqrt{25 - 21} = 5 \pm 2 = 3$ [illegible] 7 [illegible]: [illegible]: [illegible] [illegible]. [illegible]

[illegible]

[illegible]: [illegible] [illegible]. [illegible]

[illegible]: [illegible]: $b^2 \geq 4c$ [illegible] $(b/2)^2 - c \geq 0$. [illegible]

3.2.2 [illegible]: [illegible]

[illegible]

[illegible]. [illegible]: [illegible], [illegible]: [illegible], [illegible] [illegible], [illegible], [illegible],

باب 3

[illegible]

[illegible]

[illegible] [illegible] [illegible] [

1.3 [illegible]: [illegible]

[illegible]

[illegible]. [illegible] ,[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]	=	[illegible]
x^2	=	[illegible]
$10x$	=	[illegible] 4 [illegible]
39	=	[illegible]
25	=	[illegible] 2.5×2.5 [illegible] 4 [illegible]
64	=	[illegible]
$\sqrt{64} = 8$	=	[illegible]
	$\boxed{3}$	$x = 8 - 2 \times 2.5 = 8 - 5 =$

[illegible]. [illegible] x [illegible] [illegible] [illegible] [illegible]: [illegible] [illegible] 10. [illegible] [illegible] 2.5 [illegible] x [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] $10x$. [illegible] [illegible] [illegible] $x^2 + 10x = 39$. [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] $4 \times 6.25 = 25$ [illegible] $2.5 \times 2.5 = 6.25$ [illegible] [illegible] [illegible], [illegible] [illegible] 5 [illegible] [illegible] 8. [illegible] [illegible] $39 + 25 = 64$, [illegible] [illegible] [illegible] [illegible] [illegible] $x = 3$.

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [

2.3 [illegible] 10 [illegible] 21 [illegible]: [illegible]

[illegible]

[illegible]

[illegible]

[illegible]:

$$
\begin{aligned}
25 &= MT = (10/2)^2 \\
21 &= HT + MR = HB \\
4 &= KR = 25 - 21 \\
2 &= \sqrt{KR} \\
\boxed{3} \quad & x = WJ - WA = 5 - 2 = \\
\boxed{7} \quad & x = WJ + WA = 5 + 2 = \text{[illegible]}
\end{aligned}
$$

[illegible] x [illegible]: [illegible] 21 [illegible] x [illegible] 10 [illegible] .5 [illegible] 10 [illegible] [4] [illegible] [21] [illegible] [$5 \times 5 = 25$] [illegible] .2 [illegible]

3.3 [illegible] 3 [illegible] 4 [illegible]: [illegible]

[illegible]

[illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible]. [illegible] [illegible] [illegible]. [illegible], [illegible], [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

باب 4

[illegible]

[illegible]

[illegible] $(a+x)(b+y)$ [illegible]

1. [illegible] $a \times b$
2. [illegible] $a \times y$
3. [illegible] $x \times b$
4. [illegible] $x \times y$

[illegible] $(a+x)(b+y) = ab + ay + bx + xy$

[illegible]

[illegible]:

[illegible]	[illegible]	
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

$$(+x)(+y) = +xy$$
$$(-x)(-y) = +xy$$
$$(+x)(-y) = -xy$$
$$(-x)(+y) = -xy$$

[illegible].

1.4 [illegible]

[illegible]

[illegible]:

[illegible].

[illegible].

[illegible]:

[illegible].

[illegible].

[illegible]:

[illegible].

[illegible],

[illegible].

[illegible]:

[illegible]

[illegible]:

$$(10+1)(10+2) = 100+10+20+2 = 132$$
$$(10-1)(10-1) = 100-10-10+1 = 81$$
$$(10+x)(10+x) = 100+10x+10x+x^2 = 100+20x+x^2$$
$$(10-x)(10-x) = 100-10x-10x+x^2 = 100-20x+x^2$$
$$(10-x)(10+x) = 100-10x+10x-x^2 = 100-x^2$$

$(10-x)(10+x) =$ [illegible]: [illegible]; [illegible] $100-x^2$ [illegible]! [illegible]

باب 5

[illegible]

1.5 [illegible]

[illegible]

[illegible]

[illegible]: [illegible]

$$(\sqrt{200}-10)+(20-\sqrt{200})=10$$
$$(20-\sqrt{200})-(\sqrt{200}-10)=30-2\sqrt{200}=30-\sqrt{800}$$

[illegible] $2\sqrt{200}=\sqrt{800}$. [illegible]: [illegible] $a\sqrt{b}=\sqrt{a^2b}$. [illegible]

2.5 [illegible]

[illegible]

[illegible]

[illegible]

[illegible]:

$$2\sqrt{S} = \sqrt{4S}$$
$$3\sqrt{S} = \sqrt{9S}$$
$$\tfrac{1}{2}\sqrt{S} = \sqrt{\tfrac{1}{4}S}$$

[illegible] $\sqrt{a^2 \cdot S} = a\sqrt{S}$ [illegible]: [illegible] 4 [illegible]. [illegible]

باب 6

[illegible]

[illegible]

[illegible]

[illegible]:

$$\frac{\sqrt{9}}{\sqrt{4}} = \sqrt{\frac{9}{4}} = \frac{3}{2} = 1.5$$

$$\frac{\sqrt{4}}{\sqrt{9}} = \sqrt{\frac{4}{9}} = \frac{2}{3}$$

$$\sqrt{9} \times \sqrt{4} = \sqrt{9 \times 4} = \sqrt{36} = 6$$

$$(2\sqrt{9}) \times (3\sqrt{4}) = \sqrt{36 \times 36} = 36$$

[illegible]:

- $\frac{\sqrt{a}}{\sqrt{b}} = \sqrt{\frac{a}{b}}$
- $\sqrt{a} \times \sqrt{b} = \sqrt{a \times b}$
- $(m\sqrt{a}) \times (n\sqrt{b}) = mn\sqrt{ab}$

[illegible]

باب 7

[illegible]

[illegible]

[illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] [illegible] [illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible]

[illegible]:

$$x^2 = 4x(10-x) = 40x - 4x^2$$
$$\Rightarrow \quad 5x^2 = 40x \quad \Rightarrow \quad x^2 = 8x = 64 \quad \Rightarrow \quad x = 8$$

[illegible] $x = 8$ [illegible] $10 - x = 2$.
[illegible]: [illegible].

[illegible]

[illegible]:
[illegible]: [illegible]:
[illegible].[illegible]

$$\Rightarrow x^2 = \frac{900}{25} = 36 \Rightarrow x = 6 \; 100 = x^2 \times 2\frac{7}{9} = x^2 \times \frac{25}{9}$$

[illegible] $x = 6$ [illegible] $10 - x = 4$.

[illegible]

[illegible]:
[illegible].[illegible]

$$\frac{10-x}{x} = 4 \Rightarrow 10 - x = 4x \Rightarrow 10 = 5x \Rightarrow x = 2$$

[illegible] $x = 2$ [illegible] $10 - x = 8$.

[illegible]

[illegible], [illegible] [illegible] [illegible] [illegible] [illegible]:
[illegible].[illegible]

$$\Rightarrow x^2 + 7x = 228 \Rightarrow \frac{x^2}{12} + \frac{7x}{12} + 1 = 20 \left(\frac{x}{3} + 1\right)\left(\frac{x}{4} + 1\right) = 20$$

[illegible] .15.5 [illegible]: .240.25 :228 [illegible] .12.25 [illegible]: .3.5 [illegible]: [illegible]
.$x = 12$:3.5

[illegible]

[illegible], [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]:
[illegible].[illegible] [illegible] [illegible] [illegible]

$$\Rightarrow x^2 + 28 = 11x\; x^2 + (10 - x)^2 = 58 \Rightarrow 2x^2 - 20x + 100 = 58$$

.$x = 7$ [illegible] $x = 3$ [illegible]: .$x = \frac{11}{2} \pm \sqrt{\frac{121}{4} - 28} = 5.5 \pm 2.5$

[illegible]

[illegible] [illegible] [illegible] [illegible], [illegible] [illegible] [illegible] [illegible]:
[illegible].[illegible] [illegible]

$$\Rightarrow x^2 = 12x + 288\; \frac{x}{3} \cdot \frac{x}{4} = x + 24 \Rightarrow \frac{x^2}{12} = x + 24$$

$$x = 6 + \sqrt{36 + 288} = 6 + 18 = 24$$

باب 8

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

1: [illegible]

2: [illegible]

3: [illegible]

4: [illegible]

5: [illegible]

6: [illegible]

[illegible]:

1: [illegible] $x(10-x)=21 \Rightarrow 10x-x^2=21 \Rightarrow x^2+21=10x$

$x=5\pm\sqrt{25-21}=5\pm 2=3$ [illegible] 7

2: [illegible] $(10-x)^2-x^2=40 \Rightarrow 100-20x=40 \Rightarrow x=3$

3: [illegible] $\frac{2}{3}\cdot\frac{1}{5}x^2=\frac{1}{7}x \Rightarrow \frac{2}{15}x^2=\frac{1}{7}x \Rightarrow x=\frac{15}{14}=1\frac{1}{14}$

4: [illegible] $x \cdot 4x = 20 \Rightarrow 4x^2 = 20 \Rightarrow x^2 = 5 \Rightarrow x = \sqrt{5}$

5: [illegible] $4x \cdot 5x = 2x^2 + 36 \Rightarrow 20x^2 = 2x^2 + 36 \Rightarrow 18x^2 = 36 \Rightarrow x^2 = 2$

6: [illegible] $\left(x - \frac{x}{3} - 3\right)^2 = x \Rightarrow \left(\frac{2x}{3} - 3\right)^2 = x$

$\Rightarrow \frac{4x^2}{9} + 9 - 4x = x \Rightarrow x^2 + 20\frac{1}{4} = 11\frac{1}{4}x \Rightarrow x = 9$ [illegible] $2\frac{1}{4}$

القسم

[illegible]

[illegible]:

[illegible] [illegible] [illegible] [

باب 9

[illegible]

[illegible]

[illegible]

[illegible]

- [illegible]
- [illegible]
- [illegible]
- [illegible]

[illegible] $a \times b =$ [illegible] $c \times d$

[illegible]

[illegible]

[illegible]	[illegible]
[illegible] b	[illegible] a
[illegible] d	[illegible] c

$$[illegible] = \frac{[illegible]}{[illegible]}$$

[illegible]:

1. [illegible] $= \frac{10 \times 4}{6} = \frac{40}{6} = 6\frac{2}{3}$ [illegible], [illegible]
2. [illegible] $= \frac{8 \times 4}{10} =$ [illegible], [illegible] $\frac{32}{10} = 3\frac{1}{5}$
3. [illegible] $= \frac{10 \times 6}{30} = 2$ [illegible]. [illegible]

باب 10

[illegible]

[illegible]

[illegible]: [illegible] [illegible] [illegible]

[illegible]:

$$[illegible] = [illegible] \times \frac{[illegible]}{2}$$

[illegible]

[illegible] 2.10

[illegible]

[illegible]

[illegible]

[illegible]:

$$C = \pi d \approx \frac{22}{7} \times d \quad [illegible]$$

$$A = \frac{C}{2} \times \frac{d}{2} = \frac{Cd}{4} \quad [illegible]$$

$$A = d^2 - \frac{d^2}{7} - \frac{d^2}{14} = d^2 \times \left(1 - \frac{3}{14}\right) = d^2 \times \frac{11}{14} \quad [illegible]$$

[illegible] $\pi \approx \frac{22}{7}$ [illegible]: [illegible] $\pi/4 \approx 11/14$, [illegible]

[illegible] 3.10

[illegible]

[illegible]

[illegible]. [illegible]

[illegible]: [illegible]

$$V_{\text{[illegible]}} = \text{[illegible]} \times \text{[illegible]} \times \text{[illegible]}$$
$$V_{\text{[illegible]}} = \frac{1}{3} \times \text{[illegible]} \times \text{[illegible]}$$

[illegible]! [illegible]

4.10 [illegible]

[illegible]

[illegible], [illegible]. [illegible],

[illegible]: [illegible]

$$\boxed{a^2 + b^2 = c^2}$$

[illegible] c [illegible], [illegible] b [illegible] a [illegible]. [illegible]: [illegible], [illegible], [illegible]. [illegible]

باب 11

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]: [illegible]

[illegible]

[illegible]

[illegible]: [illegible] $x + 10$. [illegible]

[illegible] $3.33 + 0.33x$ [illegible]: [illegible] $6.67 + 0.67x$ [illegible] $3.33 + 0.33x$ [illegible] $3.33 + 0.33x$ [illegible]: [illegible]

[illegible]: [illegible]

$$3.33 + 0.33x = x \quad \Rightarrow \quad 3.33 = 0.67x \quad \Rightarrow \quad x = 5$$

[illegible] 5 [illegible] 5 [illegible] x [illegible]: [illegible]

[illegible]

[illegible]

[illegible]

[illegible]: [illegible]

[illegible] 48 [illegible]	[illegible]
8	[illegible]
6	[illegible]
14	[illegible]
7	[illegible]
[illegible] $8 + 6 + 2(14) + 2(7) = 56$	[illegible]

[illegible] 54 [illegible] 6 [illegible] 54 [illegible]: [illegible] 48

[illegible] [48] [illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]: [illegible]

[illegible]	[illegible]	[illegible]
$\frac{2}{5} + \frac{1}{4} = \frac{13}{20}$ [illegible]	$7/12$	[illegible]
$1/12$ [illegible]	$3/12 = 1/4$	[illegible]
$1/12$ [illegible]	$2/12 = 1/6$	[illegible]

$\frac{13}{20} \times \frac{7}{12} + \frac{1}{12} + \frac{1}{12} =$ [illegible]: [illegible]

الملاحق ا

[illegible]

[illegible]: [illegible]

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	$ax^2 = bx$	$x = b/a$
[illegible]	[illegible]	$ax^2 = c$	$x = \sqrt{c/a}$
[illegible]	[illegible]	$bx = c$	$x = c/b$
[illegible]	[illegible]	$ax^2 + bx = c$	$x = \sqrt{(b/2a)^2 + c/a} - b/2a$
[illegible]	[illegible]	$ax^2 + c = bx$	$x = \frac{b}{2a} \pm \sqrt{(b/2a)^2 - c/a}$
[illegible]	[illegible]	$bx + c = ax^2$	$x = \frac{b}{2a} + \sqrt{(b/2a)^2 + c/a}$

[illegible]: [illegible] [illegible] [illegible]

الملاحق ب

[illegible]

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

Распределение ресурсов	Распределение ресурсов	Распределение ресурсов
Для распределение ресурсов	Ресурсы	Распределение ресурсов распределение
Ресурсы ресурсы ресурсы	Ресурсы	Распределение ресурсы
Для распределение	Распределение	Ресурсы ресурсы
Для распределение	Ресурсы	Ресурсы ресурсы
Для распределение	Ресурсы	Ресурсы ресурсы
Для распределение	Распределение	Ресурсы ресурсы
Ресурсы распределение	Ресурсы	Ресурсы ресурсы
Ресурсы ресурсы	Ресурсы	Распределение ресурсы

Распределение: распределение ресурсы распределение ресурсы. Для распределение ресурсы распределение ресурсы распределение ресурсы, распределение для распределение ресурсы распределение ресурсы распределение: для распределение распределение:

- распределение ресурсы ресурсы → распределение
- для ресурсы → распределение для ресурсы → распределение для ресурсы → ресурсы для распределение
- распределение распределение ресурсы → ресурсы
- распределение ресурсы → распределение
- распределение распределение → распределение

распределение для распределение ресурсы распределение ресурсы распределение ресурсы распределение ресурсы в распределение для распределение распределение ресурсы для распределение распределение ресурсы распределение распределение ресурсы распределение распределение для ресурсы, распределение распределение для ресурсы, ресурсы распределение. для распределение,

[illegible]

[illegible]: [illegible] [illegible] [illegible]

.10 [illegible], [illegible] [illegible] [illegible] [illegible]
.1900 [illegible], [illegible],

[illegible]: [illegible], [illegible] [illegible] [illegible]: [illegible], [illegible] [illegible]. [illegible]
.2007 [illegible], [illegible] [illegible] [illegible] [illegible] [illegible]

[illegible] [illegible] [illegible] [illegible] [illegible] [illegible]., [illegible] [illegible] [illegible] [illegible]. [illegible]
.93[illegible]49 [illegible]. ,[illegible]2017[illegible] 18 [illegible], [illegible],[illegible] [illegible]

Libertine Linux and Arabic Naskh Noto in Typeset
fontspec and polyglossia with XeLaTeX Via

[illegible]