

Утверждаю»

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2022

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1, 2, 3, 4, 5, 6

468

38.05.01

2022

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1) -

6.

7.

11.

12.

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| 1 | | 33 | 4 | 2 | 0 | 27 |
|---|--|-----|----|----|---|----|
| 2 | | 37 | 6 | 4 | 0 | 27 |
| 3 | | 34 | 4 | 4 | 0 | 26 |
| 4 | | 4 | | | | 4 |
| | | 108 | 14 | 10 | 0 | 84 |

| 5 | | 33 | 0 | 2 | 0 | 31 |
|---|--|-----|---|---|---|-----|
| 6 | | 34 | 0 | 4 | 0 | 30 |
| 7 | | 32 | 0 | 2 | 0 | 30 |
| 8 | | 9 | | | | 9 |
| | | 108 | 0 | 8 | 0 | 100 |

| 9 | | 40 | 8 | 4 | 0 | 28 |
|----|--|-----|----|---|---|----|
| 10 | | 33 | 4 | 2 | 0 | 27 |
| 11 | | 31 | 2 | 2 | 0 | 27 |
| 12 | | 4 | | | | 4 |
| | | 108 | 14 | 8 | 0 | 86 |

4

| 13 | | 63 | 0 | 8 | 0 | 55 |
|----|--|----|---|---|---|----|
| 14 | | 9 | | | | 9 |

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|--|--|----|---|---|---|----|
| | | | | | | |
| | | 72 | 0 | 8 | 0 | 64 |

5

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|----|--|----|----|---|---|----|
| | | | | | | |
| 15 | | 10 | 2 | 2 | 0 | 6 |
| 16 | | 14 | 4 | 4 | 0 | 6 |
| 17 | | 12 | 4 | 2 | 0 | 6 |
| | | 36 | 10 | 8 | 0 | 18 |

| | | | | | | |
|----|--|-----|----|----|---|-----|
| | | | | | | |
| 18 | | 27 | 4 | 8 | 0 | 15 |
| 19 | | 9 | | | | 9 |
| | | 36 | 4 | 8 | 0 | 24 |
| | | 468 | 42 | 50 | 0 | 376 |

Лекция № 1.

Лекция № 2.

Лекция № 3.

- -

Лекция № 4.

Лекция № 5.

Лекция № 6.

Лекция № 7.

Лекция № 8.

Лекция № 9.

Лекция № 10.

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Лекция № 11.

Лекция № 12.

Лекция № 13.

Лекция № 14.

Лекция № 15.

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Лекция № 16.

Лекция № 17.

Лекции № 18.

Лекция № 19.

Лекция № 20.

Лекция № 21.

6.14; 6.19; 6.25; 6.30; 6.33

59; 5.60

4.37; 6.3; 6.4; 6.7; 5.24; 5.27; 5.41; 5.44; 5.58; 5.61

4; 10.18; 10.31; 10.34; 10.42; 10.52; 10.57; 10.62; 10.67;

11.41

12.60; 12.76; 12.78; 12.81; 12.117; 12.122; 12.128; 12.132

: 12.3; 12.7; 12.14; 12.21; 12.25; 12.29; 12.46; 12.61; 12.77;
12.80; 12.85; 12.118; 12.125; 12.130; 12.134

2; 13.30; 13.31; 13.34; 13.39; 13.40

15.25; 15.27

4; 15.26;

15.28; 15.31

$$z=1-2i \quad z=-i \quad z=-1-i \quad z=3.$$

$$z=1-\sqrt{3}i \quad z=-2+2i \quad z=2 \quad z=3i.$$

$$z=2+2i \quad z=1-\sqrt{3}i.$$

$$\cancel{(1+3i)} + \cancel{(-2-i)} \quad 3 + (-5+i);$$

$$\cancel{(4-3)} - \cancel{(-2+3)} \quad (1-3i) - 4i;$$

$$d) \cancel{(2+3i)}(3-i); \quad e) \cancel{(1+3i)}\cancel{(-2+i)};$$

$$\frac{\cancel{(2-i)}\cancel{(1+i)}}{-3-i} \quad \frac{\cancel{(1-i^2)}\cancel{(3-i)^2}}{2+4i}.$$

.7; 4.9; 4.11; 4.12 (- -

17.26; 17.29

17.31

.20; 16.21

.36

Задания для аудиторной работы

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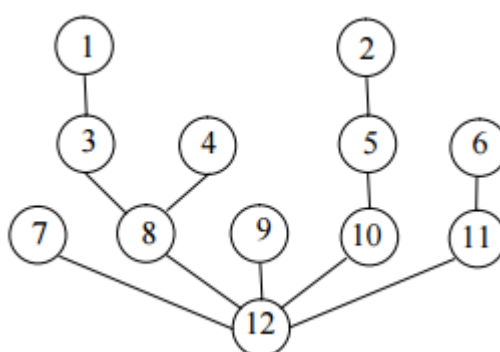
Задачи для самостоятельного решения

21.6; [4]: 254; 260

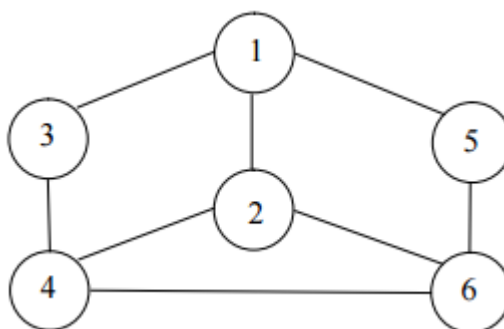
Задания для аудиторной работы

Задачи для самостоятельного решения

1.



2.



3.

$$I = \begin{pmatrix} 0 & 1 & 0 & 1 \\ 0 & 0 & 1 & 1 \\ 0 & 1 & 0 & 0 \\ 1 & 0 & 1 & 0 \end{pmatrix}$$

$$T = \begin{pmatrix} -1 & 1 & 0 & 1 & 0 & 0 & 0 \\ 1 & 0 & -1 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & -1 & 1 & 0 & 0 \\ 0 & -1 & 1 & 0 & -1 & 0 & -1 \\ 0 & 0 & 0 & 0 & 0 & -1 & 1 \end{pmatrix}$$

[2]:

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| ∞ | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 |
| 0 | ∞ | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| 0 | 0 | ∞ | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| 0 | 0 | 0 | ∞ | 0 | 0 | 0 | 1 | 0 | 0 |
| 0 | 0 | 0 | 0 | ∞ | 0 | 0 | 1 | 0 | 1 |
| 0 | 0 | 0 | 0 | 0 | ∞ | 0 | 0 | 0 | 1 |
| 1 | 1 | 0 | 0 | 0 | 0 | ∞ | 0 | 0 | 0 |
| 0 | 0 | 1 | 1 | 1 | 0 | 0 | ∞ | 0 | 0 |
| 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | ∞ | 0 |
| 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | ∞ |

[2]:

1

| | | | | | | |
|---|---|---|---|---|---|---|
| | A | B | C | D | E | F |
| A | | 2 | 4 | | | |
| B | 2 | | 1 | | 7 | |
| C | 4 | 1 | | 3 | 4 | |
| D | | | 3 | | 3 | |
| E | | 7 | 4 | 3 | | 2 |
| F | | | | | 2 | |

$$\begin{pmatrix} 0,2 & 0,7 & 0,5 \\ 0,6 & 0,2 & 0,5 \\ 0,5 & 0,7 & 0,8 \end{pmatrix}$$

| | A_2 | A_3 | A_4 | A_5 | A_6 |
|-------|-------|-------|-------|-------|-------|
| A_1 | 2 | | 6 | | 2 |
| A_2 | | 3 | 4 | | 2 |
| A_3 | | | | 3 | 3 |
| A_4 | | | | 4 | 5 |
| A_5 | | | | | 3 |

[2]:

| | | | | |
|------|---|--|--|--|
| | | | | |
| -1 - | 1 | | | |
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| -1 - | 2 | | | |

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| -1 - | 3 | | | |
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-1 -

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| | | | | |
| -1 - | 6 | 6 | | |
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- 1.
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- 5.
- 6.

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$$\begin{cases} 3x_1 - x_2 + 2x_3 = 3 \\ 2x_1 - x_2 + 3x_3 = 3 \\ x_1 + 5x_2 - 4x_3 = 7. \end{cases}$$

2.

$$A = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 3 & 2 \\ 1 & -1 & 1 \end{pmatrix}, \quad A^{-1} = \begin{pmatrix} 3 & 2 & 1 \\ 3 & 2 & 2 \\ 1 & 3 & 1 \end{pmatrix}$$

$$\begin{cases} 3x_1 - x_2 + 2x_3 = 0 \\ 2x_1 - x_2 + 3x_3 = 0 \\ x_1 + 5x_2 - 4x_3 = 0 \end{cases}$$

$$\begin{vmatrix} -1 & 1 & 3 & 2 \\ -2 & 0 & 1 & 0 \\ 0 & 3 & 0 & 4 \\ 1 & 0 & -1 & 2 \end{vmatrix}$$

$$A^{-1} = \begin{pmatrix} 3 & 2 & 1 \\ 3 & 2 & 2 \\ 1 & 3 & 1 \end{pmatrix}$$

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| 2 | | |

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- 24.
- 25.**

- 1.
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- 3.
- 4.**

$$y = x^3 - x$$

$$z = \frac{xy}{x-y}$$

| | | |
|---|--|----------|
| | | |
| 1 | | 3,75-4 |
| 2 | | 2,75-3,5 |
| 3 | | 2-2,5 |
| 4 | | |

- 1.
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- 24.

$$y = e^x, y = \cos x, y = \sin x, y = \ln(x).$$

-48).

-
-

$$y' + 2y = x^2;$$

~~$$y' + 2y = x^2;$$~~

$$y' = \frac{y}{x} \ln \frac{y}{x}.$$

~~$$y'' - 6y' + 5y = 0;$$~~

$$y' - y = e^x.$$

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- 22.

- 23.
- 24.

$$y = e^x, y = \cos x, y = \sin x, y = \ln(x)$$

- 25.

- 26.
- 27.
- 28.
- 29.
- 30.

- 31.

- 32.

- 33.

- 1.
- 2.

$$3. \quad \int \frac{x-4}{x^3} dx; \quad - \quad \int_0^1 x e^{-x} dx.$$

$$4. \quad y' + 2xy = 2x.$$

| | | |
|---|--|----------|
| | | |
| 1 | | 3,75-4 |
| 2 | | 2,75-3,5 |
| 3 | | 2-2,5 |
| 4 | | 2 |

1.

0,5.

2.

$$f(x) = \begin{cases} 0, & x \leq 0 \\ a \sin 3x, & 0 < x \leq \frac{\pi}{3} \\ 0, & x > \frac{\pi}{3} \end{cases}$$

3.

$$4. \quad \dots$$

4.

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- 33.

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- 35.
- 36.
- 37.

- 38.

- 1.
- 2.
- 3.

$$\begin{pmatrix} 0 & 0 & 0 & 1 & 0 \\ 0 & 0 & 0 & 0 & 1 \\ 0 & 0 & 1 & 0 & 0 \\ 1 & 0 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 & 0 \end{pmatrix}.$$

| | | |
|---|--|--|
| | | |
| 1 | | |
| 2 | | |

| | | |
|---|--|----------|
| | | |
| 1 | | 4,75-5 |
| 2 | | 3,75-4,5 |
| 3 | | 3-3,5 |
| 4 | | |

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Действителен: с 21.09.2022 до 15.12.2023