

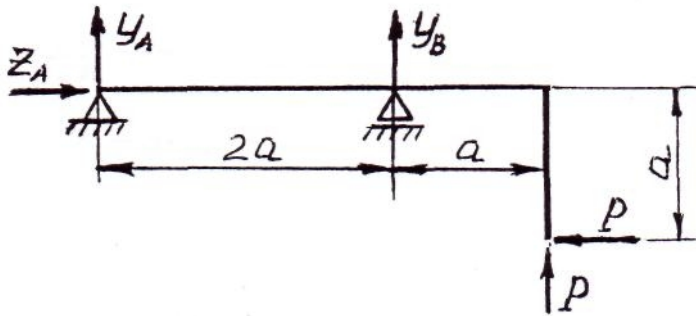
“

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1

1.

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1) $Y_A = 0; Y_B = -P; Z_A = P$

2) $Y_A = P; Y_B = 0; Z_A = P$

3) $Y_A = 0; Y_B = P; Z_A = P.$

2.

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1.

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2.

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3.

3.

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4.

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1) $\bar{P}_U = m \bar{a}_S$ 2) $\bar{P}_U = -m \bar{a}_S$ 3) $\bar{M}_U = -I_S \cdot \bar{\varepsilon}$

$\bar{M}_U = -I_S \cdot \bar{\varepsilon}$ $\bar{M}_U = -I_S \cdot \bar{\varepsilon}$

5.

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1.

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2.

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3.

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4.

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5.

6.

1.

$\tau = G \cdot \gamma$

$\sigma = \frac{M_x}{W_x}$

2.

$\tau = \frac{Q}{F}$

3.

$\sigma = \frac{N}{F}$

4.

$\tau = \frac{M_k}{W_k}$

$$\sigma = E \cdot \varepsilon$$

1)_____, 2)_____, 3)_____, 4)_____.

8.

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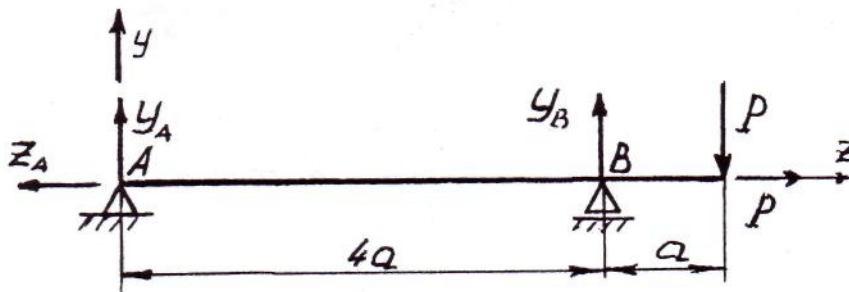
1) \vdash , 2) \vdash , 3) \vdash ,
4) \vdash .

10. $V > 40$ /

1) \vdash , 2) \vdash , 3) \vdash ,
4) \vdash .

2

1.



1) $Y_A = 0,25P$; $Y_B = 1,25P$;
 $Z_B = P$

2) $Y_A = 0,25P$; $Y_B = -1,25P$;
 $Z_A = P$.

3) $Y_A = -0,25P$; $Y_B = 1,25P$;
 $Z_A = P$

2.

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1)

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2)

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3)

3.

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1) $\bar{P}_U = -m \bar{a}_C$ 2) $\bar{P}_U = -m \omega$ 3) $\bar{P}_U = m \bar{a}_C$ 4) $\bar{P}_U = -m \varepsilon$

4.

1) $W = 3n - 2P_5 - P_4$ 2) $W = 3n - 2$ 3) $W = 3n - P_4 - P_5$

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, 4, 5—

5.

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_____ .

6.

X?

1) $S_X = \int_F y dF$

2) $S_X = \int_F x dF$

3) $S_X = \int_F y^2 dF$

7.

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1) $\sigma = \frac{P}{F}$; B. $\sigma = \frac{N}{F}$; C. $\tau = \frac{Q}{F}$;

2)

3) D. $\tau = \frac{M_k}{I_p} \cdot \rho$; E. $\sigma = \frac{M_k}{b_c} \cdot y$; K. $\sigma = E\varepsilon$.

1 _____; 2 _____; 3 _____,

8.

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9.

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1) _____; 2) _____;

3) _____; 4) _____.

10. _____:

1) _____; 2) _____; 3) _____; 4) _____; 5) _____.

1.

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2.

3.

Z

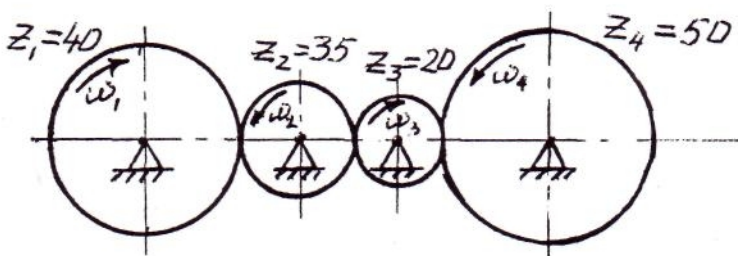
$$1) T = \frac{1}{2} I_z \omega^2 \quad 2) T = \frac{1}{2} I_z \omega \quad 3) T = \frac{1}{2} M V_c^2$$

4.

$$1) U_{14} = -50/40$$

$$2) U_{14} = +50/40$$

$$3) U_{14} = +40/50$$



5.

? 1)4;

2)3; 3)6; 4)5

6.

7.

1)

$$\sigma = \frac{N}{F}$$

2)

-

$$B. \tau = G \cdot \gamma$$

3)

C. $\sigma = \frac{M_x}{W_x}$

4)

D. $\sigma = E \cdot \varepsilon$

E. $\tau = G \cdot \Theta \rho$

K. $\sigma = E \frac{y}{\rho}$

1)_____, 2)_____, 3)_____, 4)_____.

8.

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9.

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1)

, 2)

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, 4)

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10.

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1)

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, 3)

, 4)

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1.

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0.

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1)

2)

3)

D.

1) _____, 2) _____, 3) _____.

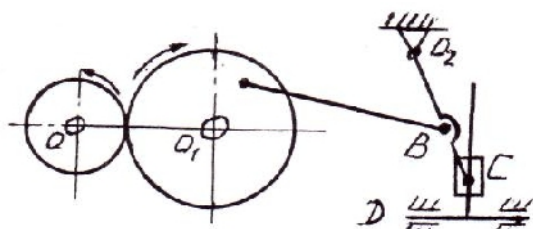
3.

$$1) \frac{dV_x}{dt} = \sum P_x, \quad 2) m \frac{dx}{dt} = \sum P_x, \quad 3) m \frac{d^2x}{dt^2} = \sum P_x,$$

$$\frac{dV_y}{dt} = \sum P_y, \quad m \frac{dy}{dt} = \sum P_y, \quad m \frac{d^2y}{dt^2} = \sum P_y,$$

$$\frac{dV_z}{dt} = \sum P_z; \quad m \frac{dz}{dt} = \sum P_z; \quad m \frac{d^2z}{dt^2} = \sum P_z.$$

4.

1) $W = 2$; 2) $W = 3$; 3) $W = 1$.

5. .

()?
1) ,2) ,3)

6.

1) $\tau = \frac{Q}{F}$ 2) $\tau = \frac{M_x}{W_x}$ 3) $\tau = \frac{M_k}{W_k}$

7. .

8. .

9. _____ .
1) ,2) ,3) :
 ,4) .

10. :
1) ,2) ,3)
 ,4)
 .

1.

2.

1. $\omega^2 r$

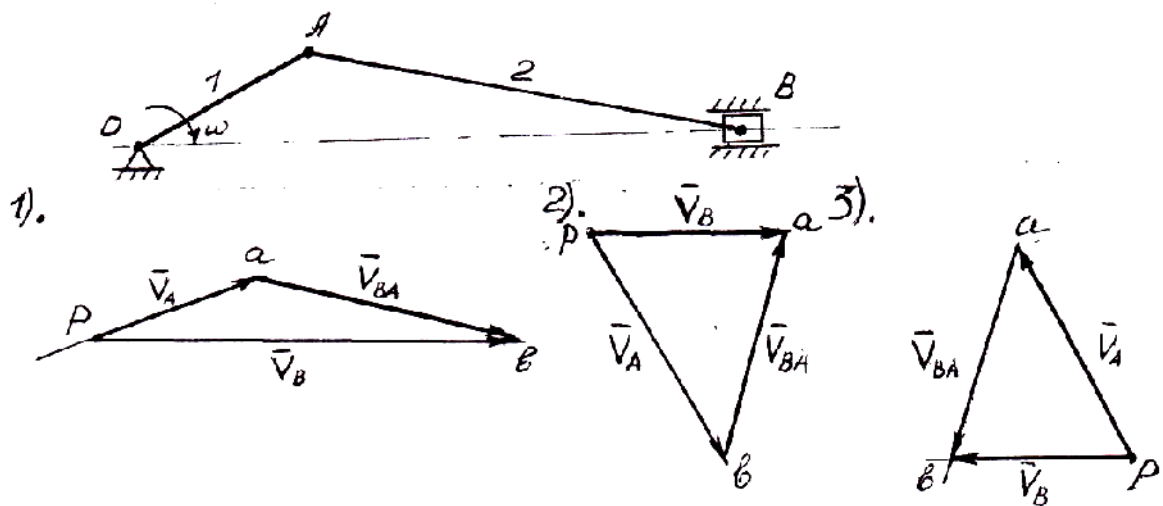
2. $\omega \cdot r$

3. $\varepsilon \cdot r$

3.

1) $\vec{q} = m \vec{a}$; 2) $\vec{q} = \vec{a} \cdot \vec{v}$; 3) $\vec{q} = m \vec{v}$.

4.



5.

6.

7. _____.

_____:

1) _____ - _____ . $\sigma_{\max} = N_{\max} / F \leq [\sigma]$

2) _____ . $\sigma_{\max} = M_{\max} / W_x \leq [\sigma]$

3) _____ . $\tau_{\max} = Q / F \leq [\tau]$

4) _____ . $\tau_{\max} = M_{K \max} / W_p \leq [\tau]$

_____ . $\sigma = E \cdot \varepsilon$

_____ . $\tau = G \cdot \gamma$

1)_____, 2)_____, 3)_____, 4)_____.

8. _____.

_____?

1) _____ ; 2) _____ ; 3) _____ .

9. _____:

1) _____ , 2) _____ , 3) _____ , 4)

_____.

10.

_____:

1) n_i _____ N_i _____ , _____ i _____ ;

2) n_i _____ N_i _____ , _____ i _____ ;

3) n_i _____ , _____ N_i _____ i _____ ;

4) n_i _____ i _____ , _____ N_i _____ .

1.

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1)

; 2)

; 3)

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2.

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3.

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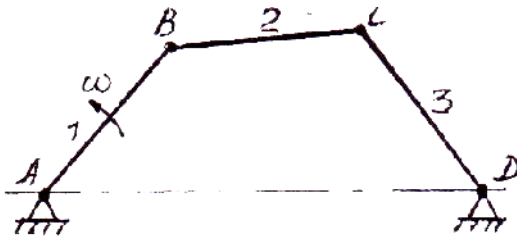
:

$$1) T = \frac{1}{2} I_z \omega^2 \quad 2) T = MV_C^2 \quad 3) T = \frac{1}{2} MV_C^2$$

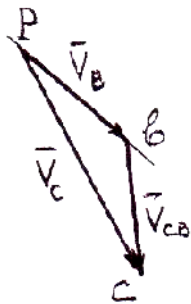
4.

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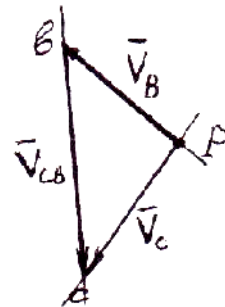
1).



2).



3).



5. Закончите утверждения

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6.

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1)

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2)

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7.

1)

2)

3)

1)_____, 2)_____, 3)_____.

8.

9.

10.

1) $M = \sqrt{M_U^2 + T^2}$; 2) $M = \sqrt{\sum M F_x^2 + T^2}$; 3) $M = \sqrt{M_U^2 + T^2}$;

4) $M = \sqrt{M_U^2 + T^2}$.

7.

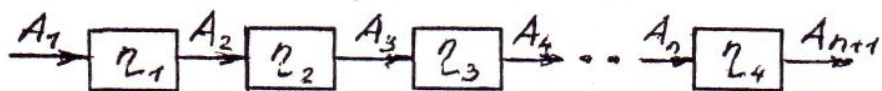
1.

_____.

2.

$$1) \varpi = \varpi + \varpi ; 2) \varpi = \varpi + \varpi_{BA} + \varpi ; 3) \varpi = \varpi + \varpi + \varpi$$

4.



$$1) \eta = \frac{A_{n+1}}{A_1} = \eta_1 + \eta_2 + \eta_3 + \dots + \eta_n$$

$$2) \eta = \frac{A_{n+1}}{A_1} = \frac{1}{\eta_1} \cdot \frac{1}{\eta_2} \cdot \frac{1}{\eta_3} \dots \frac{1}{\eta_n}$$

$$3) \eta = \frac{A_{n+1}}{A_1} = \eta_1 \cdot \eta_2 \cdot \eta_3 \dots + \eta_n$$

5.

6.

$$1) \sigma = E \cdot \varepsilon ; 2) \tau = G \cdot \gamma ; 3) \tau = G \Theta \rho ; 4) \sigma = E \frac{Y}{\rho}$$

7.

1) -

$$\sigma_{\max} = \frac{M_{x\max}}{W_x} \leq [\sigma]$$

2)

$$\tau_{\max} = \frac{\Theta_{\max}}{F} \leq [\tau]$$

3)

$$\sigma_{\max} = \frac{N_{\max}}{F} \leq [\sigma]$$

$$\tau_{\max} = \frac{M_{k\max}}{W_k} \leq [\tau]$$

1)_____, 2)_____, 3)_____.

8. .

_____.

9.

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1) , 2)
, 3) , 4)

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10.

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1) b, h, l; 2) h l; 3) b l; 4) b h.

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.

9. _____ (σ_{HP} σ_{FP})

1) _____, 2) _____, 3) _____, 4) _____

10. _____, _____, _____
 1) _____, 2) _____, 3) _____, 4) _____

9.

1. _____ :

20

15

1)30 ; 2)25 ; 3) 35 .

2. _____ :

:

$$1) 2\left(\bar{\nu}_r \cdot \varpi_e\right); 2) 2\left(\bar{\nu}_r \cdot \varpi_e\right); 3) 2\left(\varpi_e \cdot \bar{\nu}_r\right); 4) 2\left(\varpi_r \cdot \bar{\nu}_e\right)$$

3. _____ .

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_____ .

4. _____ .

_____ .

5.

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1) _____ - _____ . N

2) _____ . Q_y

3) _____ . Q_x

4) _____ . M_x

5) _____ - _____ . M_y

. M_z

1)_____, 2)_____, 3)_____, 4)_____, 5)_____.

6. _____ .

_____ .

7. _____ .

_____ .

8. _____ .

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9. :
 1) , 2) , 3)
 , 4)

10. .

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$$1) F_{x1} = |-F_{r2}| = F_{t1} \cdot \operatorname{tg} \alpha \cdot \sin \delta_1;$$

$$2) F_x = F_1 \cdot \operatorname{tg} \beta;$$

$$3) F_{t2} = |-F_{x1}| = \frac{2T_2}{d_2};$$

$$4) F_x = 0.$$

10.

1.

2.

:

- 1) ωr
- 2) $\omega^2 r$
- 3) εr

3.

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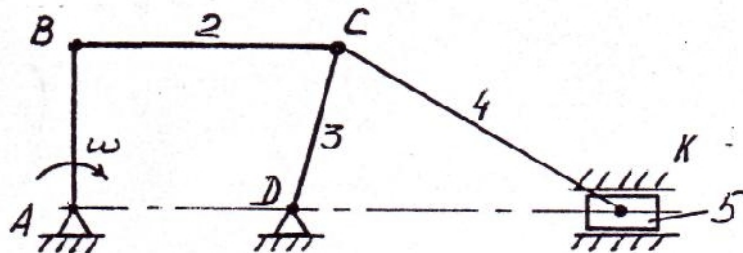
:

- 1) $ds = \bar{m} dt$; 2) $d\bar{s} = \bar{p} dt$; 3) $d\bar{s} = \bar{p} \cdot \bar{v}$

4.

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- 1) .-5, .-1;
- 2) .-6, .-1;
- 3) .-7, .-0.



5.

:

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- 1) $I_x = \int_F y^2 dF$;
- 2) $I_x = \int_F x^2 dF$;
- 3) $I_x = \int_F x dF$.

6.

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7. : : :

1) $\sigma = E \cdot \varepsilon$

2) $\tau = M_k / W_p$

3) () $\sigma = M_U / W_X = \sqrt{M_x^2 + M_v^2} / W_X$

III $\sigma = (\sqrt{M_x^2 + M_v^2 + M_k^2}) / W_X$

4) () $\tau = Q / F$

IV

$\sigma = (\sqrt{M_x^2 + M_v^2 + 0,75M_k^2}) / W_X$

1)_____, 2)_____, 3)_____, 4)_____.

8. .

9. _____ : .

1) , 2) , 3) , 4) .

10. , , :

1) ;

2) ;

3) ;

4) .

11.

1.

:

- 1) $\sum P_X = 0; \sum P_Y = 0; \sum P_Z = 0;$
- 2) $\sum P_Y = 0; \sum P_X = 0; \sum M_0 = 0;$
- 3) $\sum M_A = 0; \sum M_B = 0; \sum M_Y = 0.$

2.

:

:

1. $\omega^2 r$
2. ωr
3. εr

3.

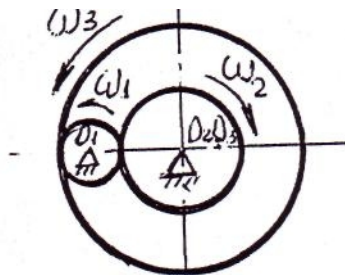
:

- 1) $dA = P ds \cos \alpha$
- 2) $dA = P \cdot V$
- 3) $dA = P \cdot t$

4.

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- 1) .-3; .-2;
- 2) .-2; .-2;
- 3) .-2; .-1.



6.

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- 1) $\sigma_{\max} \quad) \quad QS_x / b(y)J_x$
- 2) $\sigma^{III} \quad) \quad \sqrt{b^2 + 4r^2}$
- 3) $\sigma^{IV} \quad) \quad My / J_x$

$$) \sigma/2 + 1/2 \cdot \sqrt{\sigma^2 + 4r^2}$$

$$) \sqrt{\sigma^2 + 3r^2}$$

$$) M_{\max}/W_X$$

7. 1)_____, 2)_____, 3)_____.

- 1) _____ ;
- 2) _____ ;
- 3) _____ ;
- 4) _____ .

8. _____ ,

9. _____ .

- 1) _____ ,
- 2) _____ ,
- 3) _____ ,
- 4) _____ .

10. _____ ,

1) _____ ; 2) _____ ; 3) _____ ; 4) _____ .

12.

1. .
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1) ; 2) ; 3) .

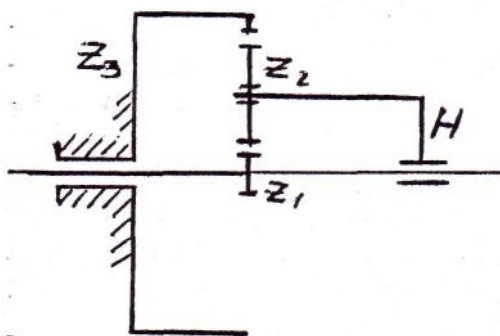
2. :
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3. .
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Z :

$$1) I_z = \sum_{i=1}^n m_i r_i; \quad 2) I_z = \sum_{i=1}^n m_i r_i^2; \quad 3) I_z = \frac{1}{2} \sum_{i=1}^n m_i r_i^2$$

4. :



$$1) U_{1H}^3 = 1 - z_1 / z_3$$

$$2) U_{1H}^3 = 1 - z_3 / z_1$$

$$3) U_{1H}^3 = 1 + z_3 / z_1$$

5. .
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 _____.

6. . :
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$$3) . \tau = Q / F$$

$$4) . \tau = G \cdot \Theta \rho$$

$$3) . \tau = Q S_x / I_x$$

$$. \tau = \sigma / 2 \cdot \sin 2\alpha$$

$$. \tau = M_k / W_k$$

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.

9. _____.

10. _____.

13.

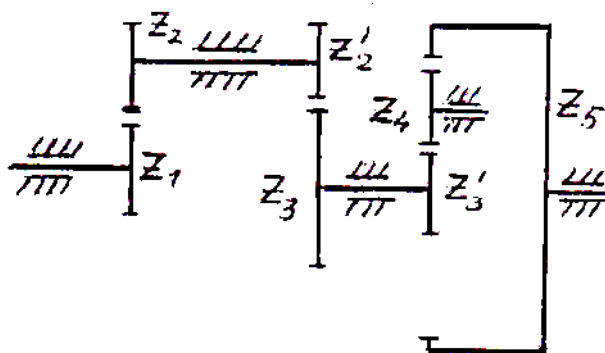
1.

2.

- 1)
- 2)
- 3)
- 4)

3.

4.



$$1) - \frac{Z_2 \cdot Z_3 \cdot Z_5}{Z_1 \cdot \frac{1}{Z_2} \cdot Z_3^1}$$

$$2) \frac{Z_2 \cdot Z_3 \cdot Z_4}{Z_1 \cdot \frac{1}{Z_2} \cdot Z_5}$$

$$3) \frac{Z_2 \cdot Z_3 \cdot Z_5}{Z_1 \cdot \frac{1}{Z_2} \cdot Z_3^1}$$

5.

6.

1)

2)

3)

$$) \sigma = E \cdot \varepsilon$$

$$) \sigma = \frac{M_x}{W_x} + \frac{M_y}{W_y}$$

$$) \sigma = E \frac{y}{\rho}$$

$$) \sigma = \frac{M_x}{W_x}$$

$$) \sigma = \frac{N}{F}$$

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.
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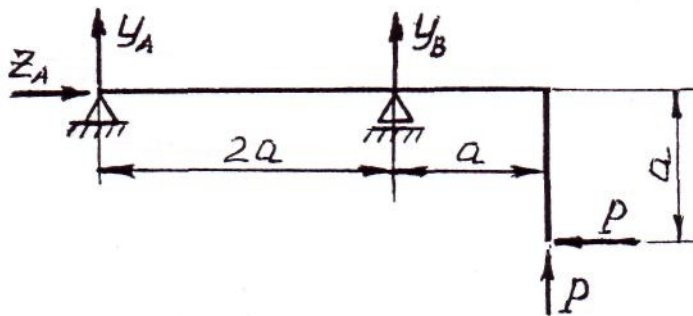
9. _____.
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; 2) _____; 3) _____;
; 4) _____.

10. _____,
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1) _____, 2) _____ - _____, 3) _____.

14.

3.

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4) $Y_A = 0; Y_B = -P; Z_A = P$

5) $Y_A = P; Y_B = 0; Z_A = P$

6) $Y_A = 0; Y_B = P; Z_A = P.$

4.

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3.

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4.

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1) $\bar{P}_U = m \bar{a}_S$ 2) $\bar{P}_U = -m \bar{a}_S$ 3) $\bar{M}_U = -I_S \cdot \bar{\varepsilon}$

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5.

. $\tau = G \cdot \gamma$

. $\sigma = \frac{M_x}{W_x}$

6.

. $\tau = \frac{Q}{F}$

7.

. $\sigma = \frac{N}{F}$

8.

$$\tau = \frac{M_k}{W_k}$$

$$\sigma = E \cdot \varepsilon$$

1)_____, 2)_____, 3)_____, 4)_____.

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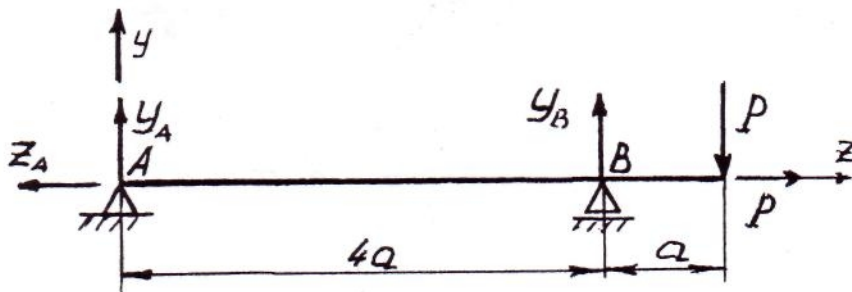
, 3)

, 4)

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15.

1.



- 1) $Y_A = 0,25P$; $Y_B = 1,25P$; $Z_B = P$
- 2) $Y_A = 0,25P$; $Y_B = -1,25P$; $Z_A = P$.
- 3) $Y_A = -0,25P$; $Y_B = 1,25P$; $Z_A = P$

2.

:

:

4)

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5)

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6)

3.

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- 1) $\bar{P}_U = -m \bar{a}_C$
- 2) $\bar{P}_U = -m \omega$
- 3) $\bar{P}_U = m \bar{a}_C$
- 4) $\bar{P}_U = -m \varepsilon$

4.

- 1) $W = 3n - 2P_5 - P_4$
- 2) $W = 3n - 2$
- 3) $W = 3n - P_4 - P_5$

5.

.

_____.

6.

X?

$$1) S_X = \int_F y dF$$

$$2) S_X = \int_F x dF$$

$$3) S_X = \int_F y^2 dF$$

7.

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1)

$$\cdot \sigma = \frac{P}{F}; \quad \cdot \sigma = \frac{N}{F}; \quad \cdot \tau = \frac{Q}{F};$$

2)

$$\cdot \sigma = E\varepsilon;$$

3)

$$\cdot \tau = \frac{M_k}{I_p} \cdot \rho; \quad \cdot \sigma = \frac{M_k}{b_c} \cdot y;$$

1 _____ ; 2 _____ ; 3 _____ ,

8.

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9.

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16.

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Z

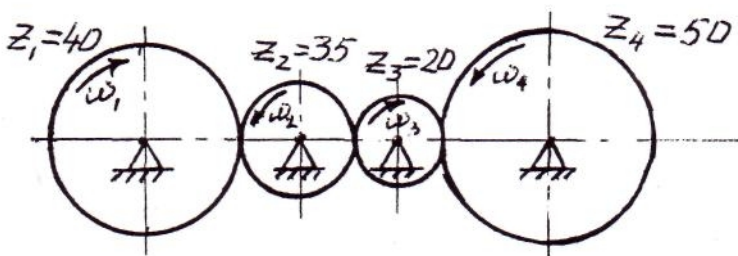
$$1) T = \frac{1}{2} I_z \omega^2 \quad 2) T = \frac{1}{2} I_z \omega \quad 3) T = \frac{1}{2} M V_c^2$$

4.

$$1) U_{14} = -50/40$$

$$2) U_{14} = +50/40$$

$$3) U_{14} = +40/50$$



5.

? 1) 4;

2) 3; 3) 6; 4) 5

6.

7.

5)

$$\sigma = \frac{N}{F}$$

6) - . $\tau = G \cdot \gamma$

7) . $\sigma = \frac{M_x}{W_x}$

8) . $\sigma = E \cdot \varepsilon$

. $\tau = G \cdot \Theta \rho$

. $\sigma = E \frac{y}{\rho}$

1)_____, 2)_____, 3)_____, 4)_____.

8.

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9.

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1)

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2)

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3)

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10.

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1) $d_1 = \frac{m_n}{\cos \beta}$; 2) $d_1 = m_n \cdot z_1$; 3) $d_1 = mq$; 4) $d_1 = m_1 z_1$.

17.

1.

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0.

2.

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1)

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2)

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3)

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D.

1) _____, 2) _____, 3) _____.

3.

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$$1) \frac{dV_x}{dt} = \sum P_x, \quad 2) m \frac{dx}{dt} = \sum P_x, \quad 3) m \frac{d^2x}{dt^2} = \sum P_x,$$

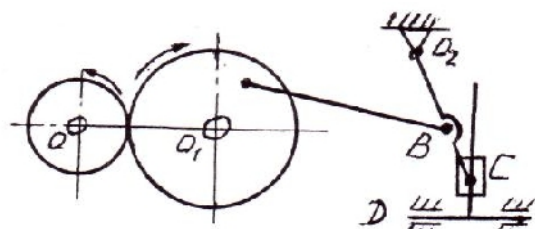
$$\frac{dV_y}{dt} = \sum P_y, \quad m \frac{dy}{dt} = \sum P_y, \quad m \frac{d^2y}{dt^2} = \sum P_y,$$

$$\frac{dV_z}{dt} = \sum P_z; \quad m \frac{dz}{dt} = \sum P_z; \quad m \frac{d^2z}{dt^2} = \sum P_z.$$

4.

.

1) $W = 2$; 2) $W = 3$; 3) $W = 1$.



5. _____ .

(_____)?
 1) _____ , 2) _____ , 3)

6.

1) $\tau = \frac{Q}{F}$ 2) $\tau = \frac{M_x}{W_x}$ 3) $\tau = \frac{M_k}{W_k}$

7. _____ .

8. _____ .

9. _____ .

1) _____ ; 2) _____ ; 3) T; 4) W_x .

10.

_____ :
 1) _____ , 2) _____ , 3) _____ , 4) _____ .

1.

2.

5. $\omega^2 r$

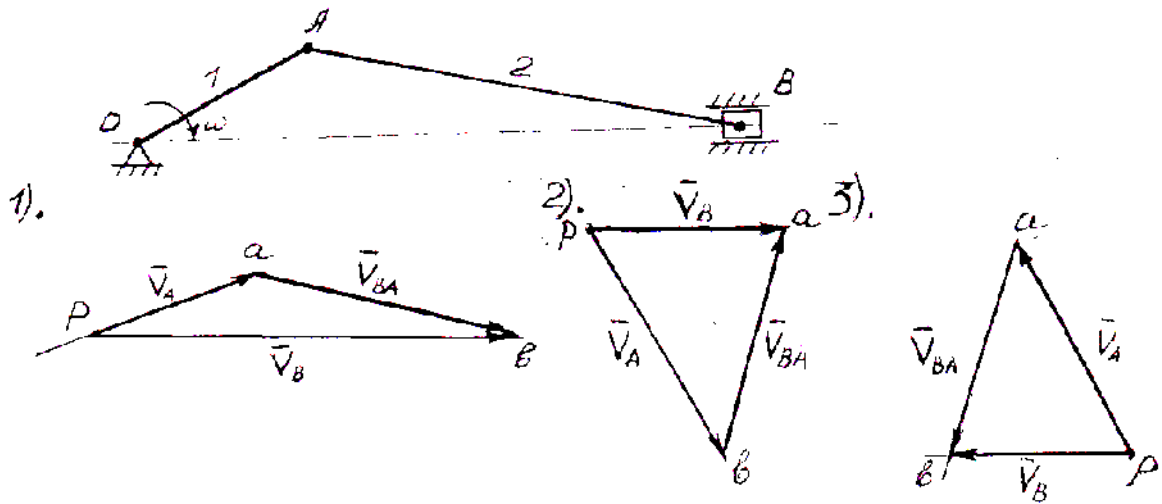
6. $\omega \cdot r$

7. $\varepsilon \cdot r$

3.

1) $\vec{q} = m \vec{a}$; 2) $\vec{q} = \vec{a} \cdot \vec{v}$; 3) $\vec{q} = m \vec{v}$.

4.



5.

6.

:

7. _____.

_____:

5) _____ - _____ . $\sigma_{\max} = N_{\max} / F \leq [\sigma]$

6) _____ . $\sigma_{\max} = M_{\max} / W_x \leq [\sigma]$

7) _____ . $\tau_{\max} = Q / F \leq [\tau]$

8) _____ . $\sigma_{\max} = M_{K \max} / W_p \leq [\tau]$

_____ . $\sigma = E \cdot \varepsilon$

_____ . $\tau = G \cdot \gamma$

1)_____, 2)_____, 3)_____, 4)_____.

8. _____.

_____?
_____ ; 2) _____ ; 3) _____ .

9. _____ :

1) _____ , 2) _____ , 3) _____ , 4) _____ .

10. _____ ,
_____ :

1) _____ , 2) _____ , 3) _____ , 4) _____ .

19.

1.

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1)

; 2)

; 3)

.

2.

:

_____.

3.

:

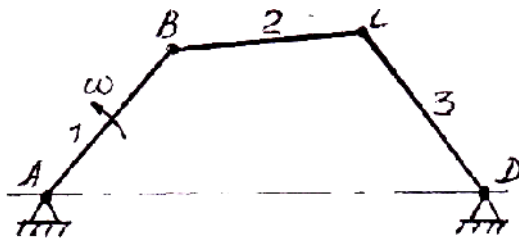
:

$$1) T = \frac{1}{2} I_z \omega^2 \quad 2) T = MV_C^2 \quad 3) T = \frac{1}{2} MV_C^2$$

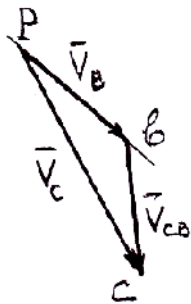
4.

:

:



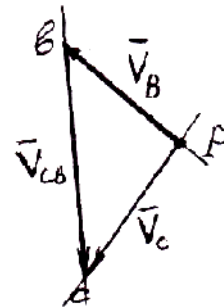
1).



2).



3).



5. Закончите утверждения

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_____.

6.

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3)

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4)

,

)

7.

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:
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4)

$$\Delta \ell = Nl / EF$$

5)

$$\varphi = M_k l / GI_P$$

6)

-

$$\Delta = M_C \omega / EI_C$$

$$\tau = G \cdot \gamma$$

1)_____, 2)_____, 3)_____.

8.

·

9.

1) ; 2) ; 3) ; 4)

_____·
:

10.

1) , 2) , 3) -
, 4) .

20.

1. . ,

_____.

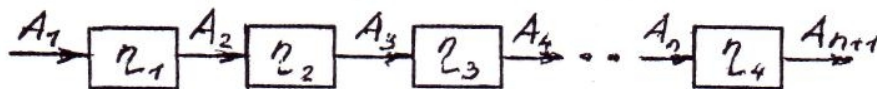
2. : , :

1) $\varpi = \varpi + \varpi$; 2) $\varpi = \varpi + \varpi_{BA} + \varpi$; 3) $\varpi = \varpi + \varpi + \varpi$

. .

_____.

4. : , .



$$1) \eta = \frac{A_{n+1}}{A_1} = \eta_1 + \eta_2 + \eta_3 + \dots + \eta_n$$

$$2) \eta = \frac{A_{n+1}}{A_1} = \frac{1}{\eta_1} \cdot \frac{1}{\eta_2} \cdot \frac{1}{\eta_3} \dots \frac{1}{\eta_n}$$

$$3) \eta = \frac{A_{n+1}}{A_1} = \eta_1 \cdot \eta_2 \cdot \eta_3 \dots + \eta_n$$

5. . -

_____ ,

:

6. :

1) $\sigma = E \cdot \varepsilon$; 2) $\tau = G \cdot \gamma$; 3) $\tau = G \Theta \rho$; 4) $\sigma = E \frac{Y}{\rho}$

7. .

:

:

3) -

$$\sigma_{\max} = \frac{M_{x\max}}{W_x} \leq [\sigma]$$

4)

$$\tau_{\max} = \frac{\Theta_{\max}}{F} \leq [\tau]$$

3)

$$\sigma_{\max} = \frac{N_{\max}}{F} \leq [\sigma]$$

$$\tau_{\max} = \frac{M_{k\max}}{W_k} \leq [\tau]$$

1)_____, 2)_____, 3)_____.

8. .

9. _____.

1) , 2) , 3) , 4) . :

10. :

1) , 2) , 3) , 4) .

21.

1. $\frac{1}{2} \cdot \frac{1}{2} = \frac{1}{4}$?

1) $\frac{1}{2}$; 2) $\frac{1}{4}$; 3) $\frac{1}{8}$.

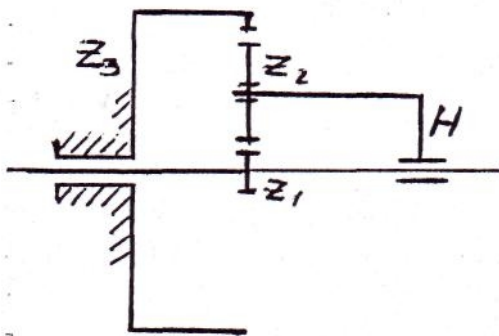
2. $\frac{1}{2} : \frac{1}{4} = 2$,

3. $\frac{1}{2} \cdot \frac{1}{4} = \frac{1}{8}$.

4. $\frac{1}{2} : \frac{1}{4} = 2$: Z :

$$1) I_z = \sum_{i=1}^n m_i r_i ; \quad 2) I_z = \sum_{i=1}^n m_i r_i^2 ; \quad 3) I_z = \frac{1}{2} \sum_{i=1}^n m_i r_i^2$$

4. $\frac{1}{2} : \frac{1}{4} = 2$:



$$1) U_{1H}^3 = 1 - z_1 / z_3$$

$$2) U_{1H}^3 = 1 - z_3 / z_1$$

$$3) U_{1H}^3 = 1 + z_3 / z_1$$

5. $\frac{1}{2} \cdot \frac{1}{4} = \frac{1}{8}$.

$\frac{1}{2} : \frac{1}{4} = 2$, $\frac{1}{2} \cdot \frac{1}{4} = \frac{1}{8}$.

6. $\frac{1}{2} : \frac{1}{4} = 2$.

$\frac{1}{2} : \frac{1}{4} = 2$: Z :

$$5) \tau = Q / F$$

$$6) \tau = G \cdot \Theta \rho$$

$$3) \tau = Q S_x / I_x$$

$$\tau = (\sigma / 2) \cdot \sin 2\alpha$$

$$\tau = M_k / W_k$$

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.

9. _____.

:

1) _____;
2) _____;
3) _____;
4) _____.

10.

1) _____; 2) _____; 3) _____;

4) _____.

22.

1. _____ :

20

15

1)30 ; 2)25 ; 3) 35 .

2. _____ :

:

1) $2\left(\bar{\nu}_r \cdot \varpi_e\right)$; 2) $2\left(\bar{\nu}_r \cdot \varpi_e\right)$; 3) $2\left(\varpi_e \cdot \bar{\nu}_r\right)$; 4) $2\left(\varpi_r \cdot \bar{\nu}_e\right)$

3. _____ .

,

_____ .

4. _____ .

_____ .

5.

.

1) _____ - _____ . N

2) _____ . Q_y

3) _____ . Q_x

4) _____ . M_x

5) _____ - _____ . M_y

. M_z

1)_____, 2)_____, 3)_____, 4)_____, 5)_____.

6. _____ .

_____ .

7. _____ .

_____ .

8. _____ .

:

9. :

1) ,

2) ,

3) ,

4) .

10. :

1) , 2) , 3) , 4) .

23.

1.

2.

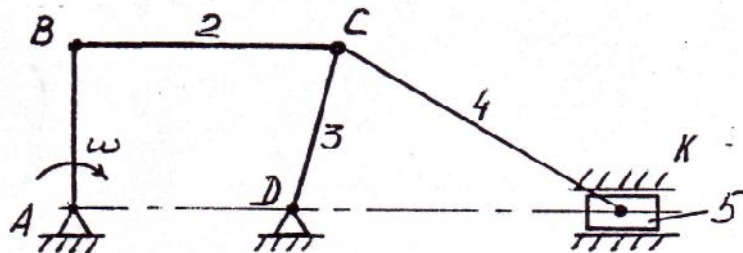
- 2) ωr
2) $\omega^2 r$
3) εr

3.

- 1) $ds = \bar{m} dt$; 2) $d\bar{s} = \bar{p} dt$; 3) $d\bar{s} = \bar{p} \cdot \bar{v}$

4.

- 4) .-5, .-1;
5) .-6, .-1;
6) .-7, .-0.



5.

- 1) $I_x = \int_F y^2 dF$;
2) $I_x = \int_F x^2 dF$;
3) $I_x = \int_F x dF$.

6.

24.

1.

:

- 1) $\sum P_X = 0; \sum P_Y = 0; \sum P_Z = 0;$
- 2) $\sum P_Y = 0; \sum P_X = 0; \sum M_0 = 0;$
- 3) $\sum M_A = 0; \sum M_B = 0; \sum M_Y = 0.$

2.

:

:

1. $\omega^2 r$
2. ωr
3. εr

3.

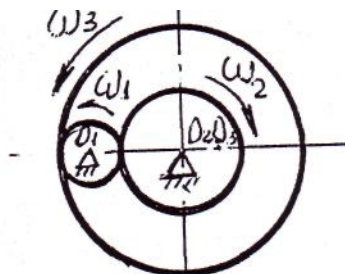
:

- 1) $dA = P ds \cos \alpha$
- 2) $dA = P \cdot V$
- 3) $dA = P \cdot t$

8.

:

- 4) .-3; .-2;
- 5) .-2; .-2;
- 6) .-2; .-1.



6.

?

4)

σ_{\max}

) $QS_X / b(y)J_X$

5)

σ^{III}

) $\sqrt{b^2 + 4r^2}$

6)

σ^{IV}

) My / J_X

) $\sigma / 2 + (1/2) \cdot \sqrt{\sigma^2 + 4r^2}$

$$) \sqrt{\sigma^2 + 3r^2}$$

$$) M_{\max} / W_X$$

1)_____, 2)_____, 3)_____.
 7. _____.

1) _____ ;
 2) _____ ;
 3) _____ ;
 4) _____ .
 8. _____.

_____ ,
 _____ ,
 9. _____.

_____ - :
 1) _____ , 2) _____ , 3) _____ ,
 4) _____ .

10. _____ :
 1) _____ , 2) _____ , 3) _____ , 4) _____ .

25.

1. .
?

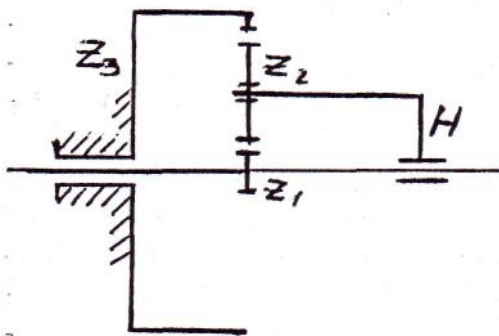
1) ; 2) ; 3) .

2. :
 ,

3. _____ :
 :

$$1) I_z = \sum_{i=1}^n m_i r_i; \quad 2) I_z = \sum_{i=1}^n m_i r_i^2; \quad 3) I_z = \frac{1}{2} \sum_{i=1}^n m_i r_i^2$$

4. :



$$1) U_{1H}^3 = 1 - z_1 / z_3$$

$$2) U_{1H}^3 = 1 - z_3 / z_1$$

$$3) U_{1H}^3 = 1 + z_3 / z_1$$

5. .
 ,
 _____.

6. . :
 :

$$7) . \tau = Q / F$$

$$8) . \tau = G \cdot \Theta \rho$$

$$3) . \tau = Q S_x / I_x$$

$$. \tau = (\sigma / 2) \cdot \sin 2\alpha$$

$$. \tau = M_k / W_k$$

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.

9. _____.

1) _____; 2) _____; 3) _____.

10. 1) _____; 2) _____; 3) _____; 4) _____.

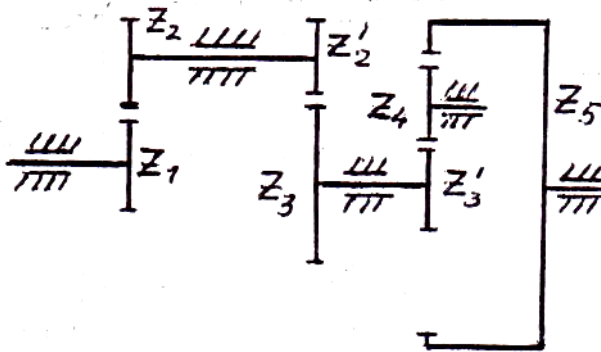
1.

2.

- 1)
- 2)
- 3)
- 4)

3.

4.



$$1) - \frac{Z_2 \cdot Z_3 \cdot Z_5}{Z_1 \cdot Z_2' \cdot Z_3'}$$

$$2) \frac{Z_2 \cdot Z_3 \cdot Z_4}{Z_1 \cdot Z_2' \cdot Z_5}$$

$$3) \frac{Z_2 \cdot Z_3 \cdot Z_5}{Z_1 \cdot Z_2' \cdot Z_3'}$$

5.

6.

1)

-

$$) \sigma = E \cdot \varepsilon$$

3)

$$) \sigma = \frac{M_x}{W_x} + \frac{M_y}{W_y}$$

3)

$$) \sigma = E \cdot \frac{y}{\rho}$$

$$) \sigma = \frac{M_x}{W_x}$$

$$) \sigma = \frac{N}{F}$$

1)_____, 2)_____, 3)_____.

7. _____.

8. _____.
:
,

9. _____.

:
1) K_{FL}; 2) K_{HL}; 3) S_H; 4) S_F.

11. _____:

1) _____, 2) _____, 3) _____ -
_____, 4) _____.