Mašinski fakultet
Ime i prezime:
Datum:

MEHANIKA 2
GRAFIČKI RAD BR. 2b

Određivanje apsolutne brzine i apsolutnog ubrzanja tačke za slučaj rotacionog prenosnog kretanja

Prema zadatim jednačinama relativnog kretanja tačke M i prenosnog kretanja tijela D odrediti za trenutak t_1 apsolutnu brzinu i apsolutno ubrzanje tačke M.

Varijanta (sl. K-9, a, b, c)	Jednadžba rotacije tijela D $\varphi_p = f_1(t)$, radijana	Jednadžba relativnog gibanja točke M $OM = s_r = f_2(t)$ cm	t_1, s	R, cm	a, cm	α [stupnjeva]
1	$2t^3 - t^2$	$18 \sin \frac{\pi}{4} t$	$^2/_3$	—	25	—
2	$0{,}4t^2 + t$	$20 \sin \pi t$	$^5/_3$	20	—	—
3	$2t + 0{,}5t^2$	$6t^3$	2	—	30	—
4	$0{,}6t^2$	$10 \sin \frac{\pi}{6} t$	1	—	—	60
5	$3t - 0{,}5t^3$	$40\pi \cos \frac{\pi}{6} t$	2	30	—	—
6	$0{,}75t + 1{,}5t^2$	$150\pi t^2$	$^1/_6$	25	—	—
7	$0{,}5t^2$	$20 \cos 2\pi t$	$^3/_8$	—	40	60
8	$t^3 - 5t$	$6(t + 0{,}5t^2)$	2	—	—	30
9	$4t + 1{,}6t^2$	$10 + 10 \sin 2\pi t$	$^1/_8$	—	—	—
10	$1{,}2t - t^2$	$2\pi \cos \frac{\pi}{4} t$	$^4/_3$	20	20	—
11	$2t^2 - 0{,}5t$	$25 \sin \frac{\pi}{3} t$	4	—	25	—
12	$5t - 4t^2$	$\frac{15}{8} \pi t^3$	2	30	30	—
13	$8t^2 - 3t$	$120\pi t^2$	$^1/_3$	40	—	—
14	$4t - 2t^2$	$3 + 14 \sin \pi t$	$^2/_3$	—	—	30
15	$0{,}2t^3 + t$	$5\sqrt{2}(t^2 + t)$	2	—	60	45
16	$t - 0{,}5t^2$	$20 \sin \pi t$	$^1/_3$	—	20	—
17	$0{,}5t^2$	$8t^3 + 2t$	1	—	$4\sqrt{5}$	—
18	$8t - t^2$	$10t + t^3$	2	—	—	60
19	$t + 3t^2$	$6t + 4t^3$	2	40	—	—
20	$6t + t^2$	$30\pi \cos \frac{\pi}{6} t$	3	60	—	—
21	$2t - 4t^2$	$25\pi(t + t^2)$	$^1/_2$	25	—	—
22	$4t - 0{,}2t^2$	$10\pi \sin \frac{\pi}{4} t$	$^2/_3$	30	—	—
23	$2t - 0{,}25t^2$	$3t^2 + 4t$	2	—	—	30
24	$2t - 0{,}3t^2$	$75\pi(0{,}1t + 0{,}3t^3)$	1	30	—	—
25	$10t - 0{,}1t^2$	$15 \sin \frac{\pi}{3} t$	5	—	—	—
26	$-2\pi t^2$	$8 \cos \frac{\pi}{2} t$	$^3/_2$	—	—	45
27	$t - 0{,}5t^3$	$10\sqrt{2}\pi \cos 2\pi t$	$^1/_8$	30	—	—
28	$2t^3 - 5t$	$2{,}5\pi t^2$	2	40	—	—
29	$0{,}6t^2$	$6\sqrt{6} \sin \frac{\pi}{16} t$	4	36	—	30
30	$2t^2 - 3t$	$\frac{5\sqrt{3}}{3} t^3$	2	20	—	30

Primjedba: U varijantama 5, 6, 10, 12, 13, 20 do 22, 24, 27, 28 OM je luk kružnice; u svim varijantama položaj točke M na shemi ima pozitivnu vrijednost s_r; na shemama 5, 10, 12, 21, 24, 27 OM je luk nad manjim središnjim kutom.

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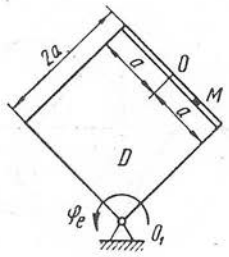

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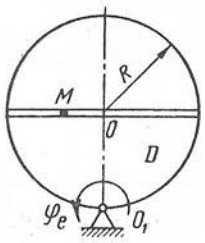

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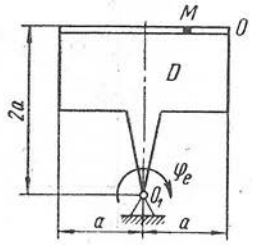

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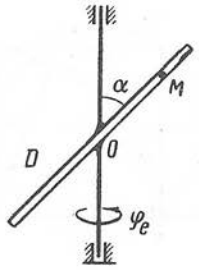

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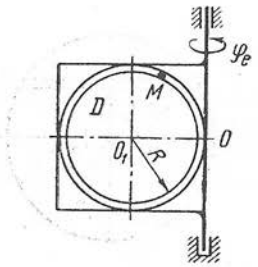

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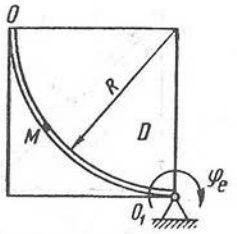

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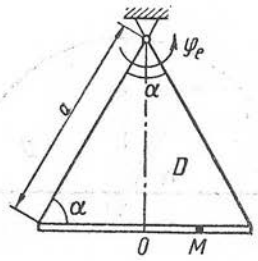

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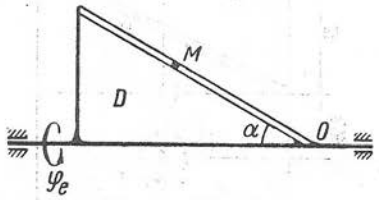

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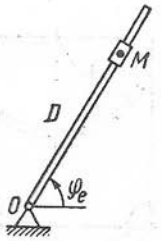

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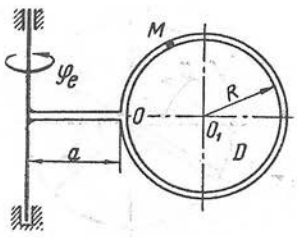

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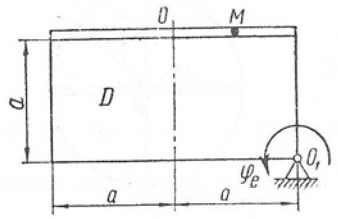

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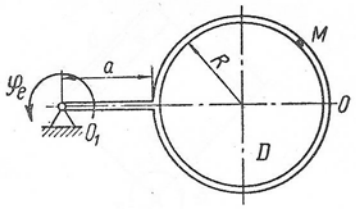

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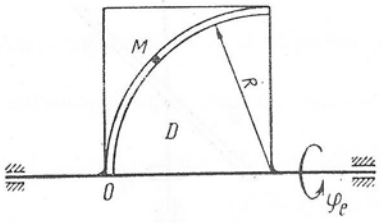

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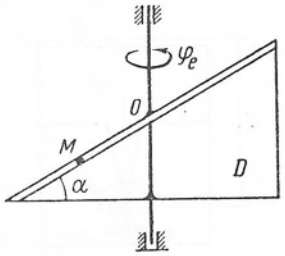

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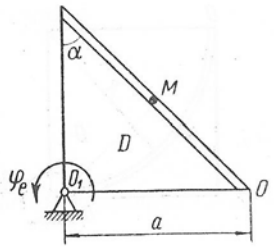

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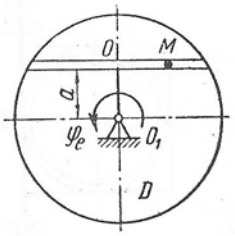

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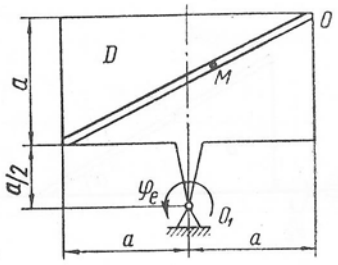

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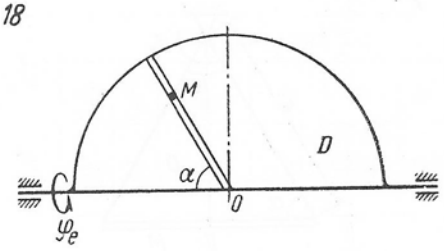

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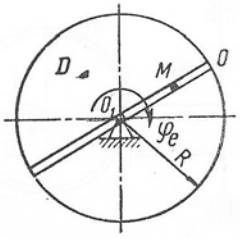

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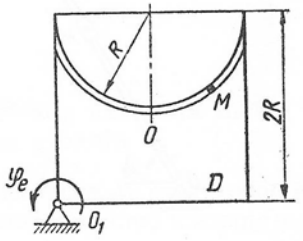

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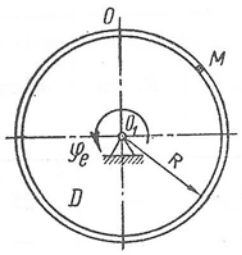

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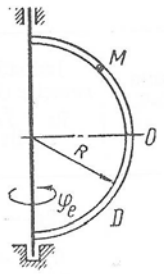

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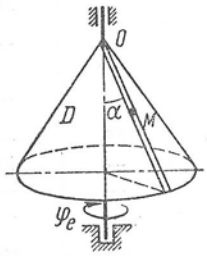

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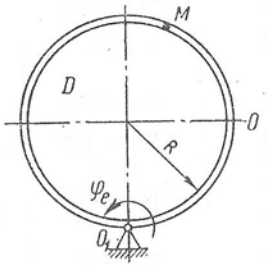

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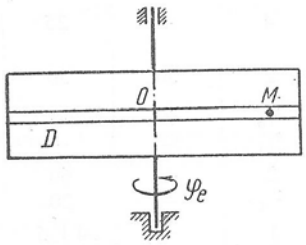

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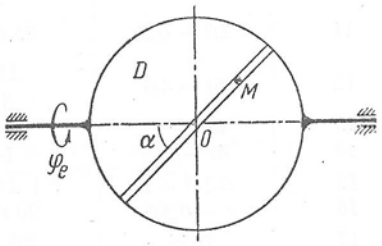

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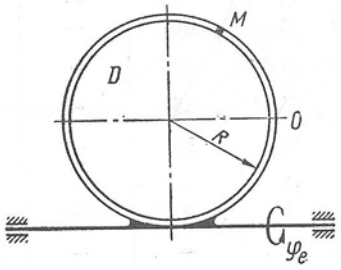

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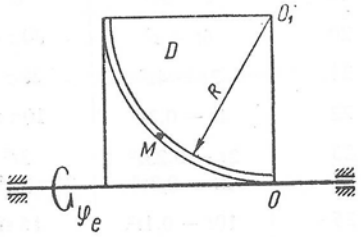

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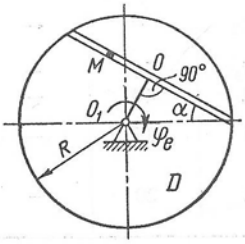
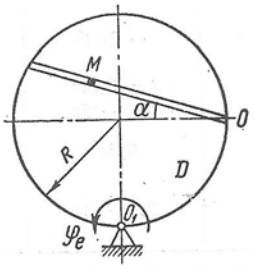
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