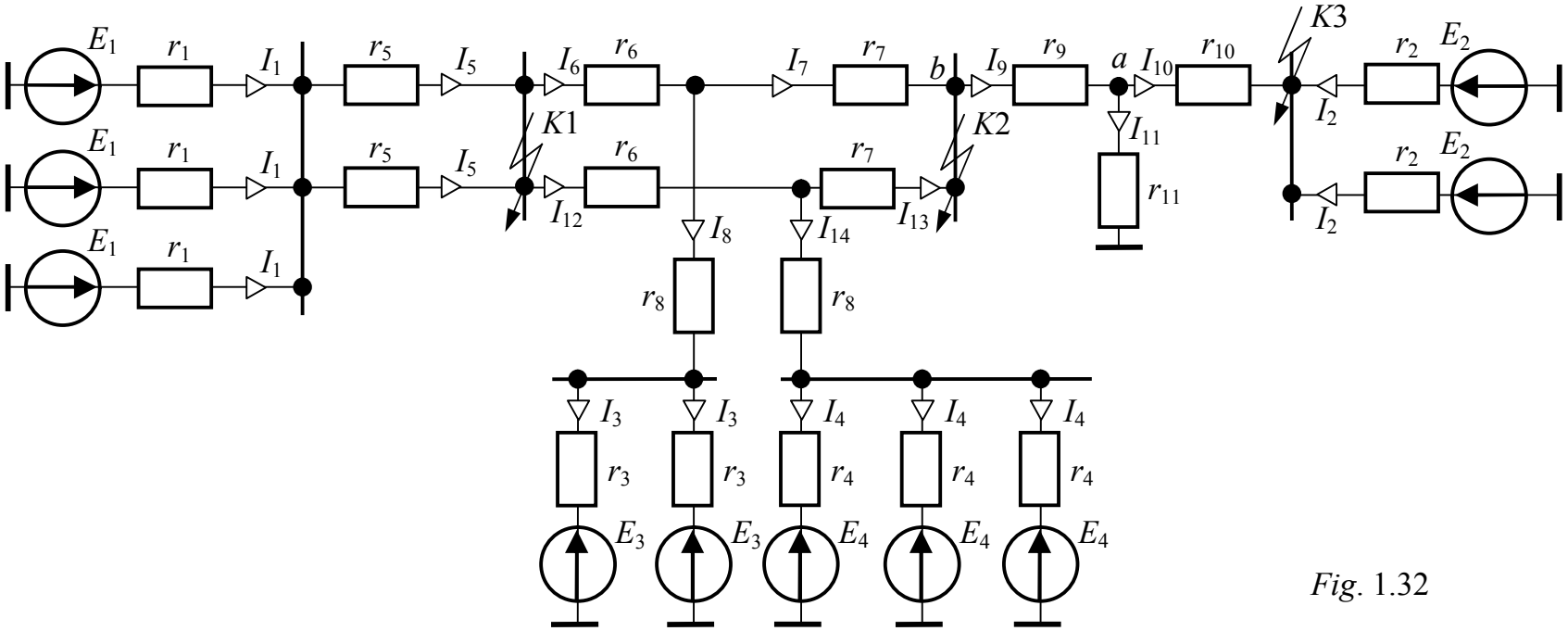
E1
r1
I1
r5
I5
I6
r6
I7
r7
b
I9
r9
a
I10
r10
K3
r2
E2
I2
K1
K2
I11
r11
I12
I13
I8
I14
r8
I3
r3
I4
r4
E3
E4

Fig. 1.32

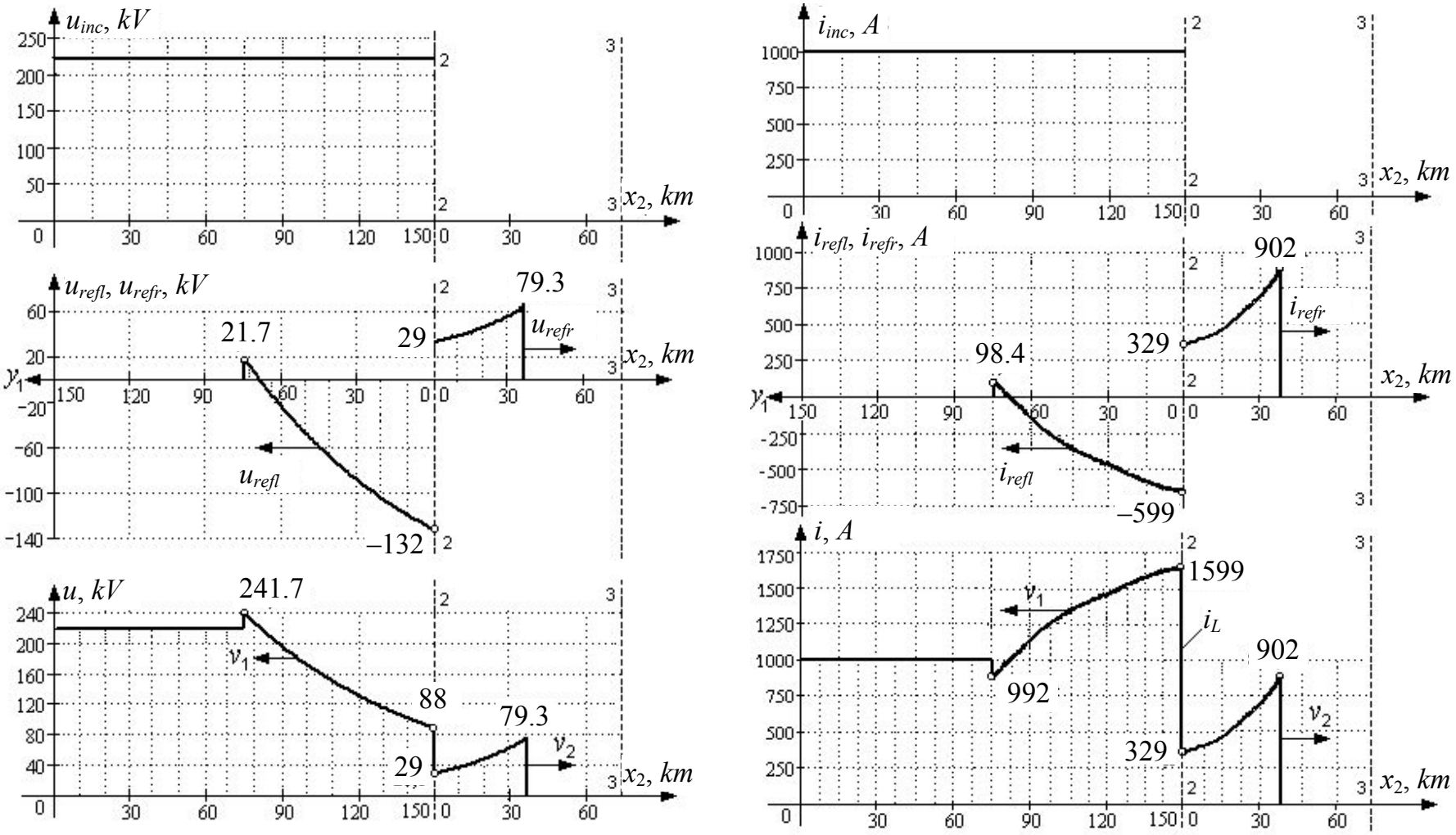
u_{inc}, kV
x_2, km
u_{refl}, u_{refr}, kV
21.7
79.3
29
u_{refr}
u_{refl}
–132
y_1
u, kV
241.7
v_1
88
79.3
29
v_2
i_{inc}, A
i_{refl}, i_{refr}, A
902
i_{refr}
98.4
329
i_{refl}
–599
i, A
1599
i_L
992
902
329

Fig. 8.30

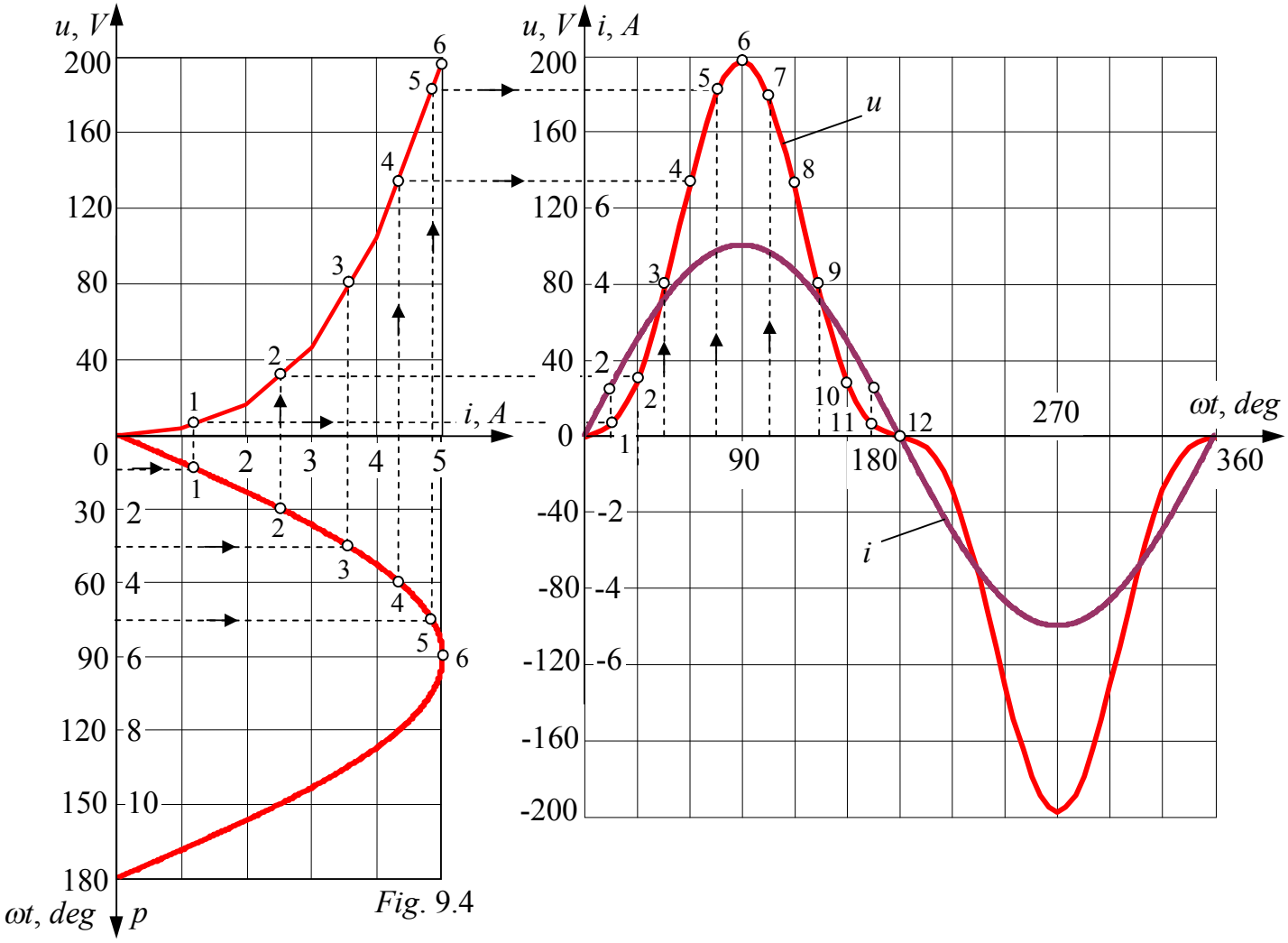
u, V
200
160
120
80
40
0
30
60
90
120
150
180
ωt, deg
p
i, A
1
2
3
4
5
6
7
8
9
10
11
12
u
i
90
180
270
360

Fig. 9.4

APPENDIX

Operator	Coordinate system		
	Cartesian	Cylindrical	Spherical
Gradient φ, $grad\varphi \equiv \nabla\varphi$	$\frac{\partial\varphi}{\partial x}\bar{i}+\frac{\partial\varphi}{\partial y}\bar{j}+\frac{\partial\varphi}{\partial z}\bar{k}$	$\frac{\partial\varphi}{\partial r}\overline{r_0}+\frac{1}{r}\frac{\partial\varphi}{\partial\alpha}\overline{\alpha_0}+\frac{\partial\varphi}{\partial z}\overline{z_0}$	$\frac{\partial\varphi}{\partial R}\overline{R_0}+\frac{1}{R}\frac{\partial\varphi}{\partial\theta}\overline{\theta_0}+\frac{1}{R\sin\theta}\frac{\partial\varphi}{\partial\alpha}\overline{\alpha_0}$
Divergency $\bar{A}$, $div\,\bar{A} \equiv \nabla\cdot\bar{A}$	$\frac{\partial A_x}{\partial x}+\frac{\partial A_y}{\partial y}+\frac{\partial A_z}{\partial z}$	$\frac{1}{r}[\frac{\partial}{\partial r}(rA_r)+\frac{\partial A_\alpha}{\partial\alpha}]+\frac{\partial A_z}{\partial z}$	$\frac{1}{R^2}\frac{\partial(R^2A_R)}{\partial R}+\frac{1}{R\sin\theta}\frac{\partial(A_\theta\sin\theta)}{\partial\theta}+\frac{1}{R\sin\theta}\frac{\partial A_\alpha}{\partial\alpha}$
Rotor $\bar{A}$, $rot\,\bar{A}\equiv\nabla\times\bar{A}$	$\begin{vmatrix}\bar{i} & \bar{j} & \bar{k}\\ \partial/\partial x & \partial/\partial y & \partial/\partial z\\ A_x & A_y & A_z\end{vmatrix}$	$\begin{vmatrix}\overline{r_0}/r & \overline{\alpha_0} & \overline{z_0}/r\\ \partial/\partial r & \partial/\partial\alpha & \partial/\partial z\\ A_r & rA_\alpha & A_z\end{vmatrix}$	$\begin{vmatrix}\overline{R_0}/R^2\sin\theta & \overline{\theta_0}/R\sin\theta & \overline{\alpha_0}/R\\ \partial/\partial R & \partial/\partial\theta & \partial/\partial\alpha\\ A_R & RA_\theta & R\sin\theta\,A_\alpha\end{vmatrix}$
Laplacian (nonvector) $\nabla^2\varphi$	$\frac{\partial^2\varphi}{\partial x^2}+\frac{\partial^2\varphi}{\partial y^2}+\frac{\partial^2\varphi}{\partial z^2}$	$\frac{1}{r}\frac{\partial}{\partial r}(r\frac{\partial\varphi}{\partial r})+\frac{1}{r^2}\frac{\partial^2\varphi}{\partial\alpha^2}+\frac{\partial^2\varphi}{\partial z^2}$	$\frac{1}{R^2}[\frac{\partial}{\partial R}(R^2\frac{\partial\varphi}{\partial R})+\frac{1}{\sin\theta}\frac{\partial}{\partial\theta}(\sin\theta\frac{\partial\varphi}{\partial\theta})+\frac{1}{\sin^2\theta}\frac{\partial^2\varphi}{\partial\alpha^2}]$