

вар.	номер.	$S_{(DCK)}$	$S_{(ПСК)}$	$S_{(парам)}$	$L_{(DCK)}$	$L_{(ПСК)}$	$L_{(парам)}$	$V_{(OX), (OY)}$
1	$\rho = \frac{9}{4-5\cos\varphi}$	$y = \frac{x^2}{2}$ $y = \frac{1}{1+x^2}$	$\rho = \cos\varphi$ $\rho = 2\cos\varphi$ $y \geq \frac{2}{\sqrt{3}}$	$\begin{cases} x = 2\cos t \\ y = 3\sin t \end{cases}$ $x \geq 1$	$y = e^x - 2$ $x \in [\ln\sqrt{8}; \ln\sqrt{24}]$	$\rho = 2\sin^3\frac{\varphi}{3}$ $\varphi \in [0; \frac{\pi}{4}]$	$\begin{cases} x = (t^2-2)\sin t + 2t\cos t \\ y = (2-t^2)\cos t + 2t\sin t \end{cases}$ $t \in [0; \frac{\pi}{2}]$	$y = x^2 + 1$ $y = x + 1$
2	$\rho^2 \sin 2\varphi = 2$	$x^2 = y + 1$ $x^2 = 9 - y$	$\rho = \sin\varphi$ $\rho = 2$ $y \leq x$	$\begin{cases} x = \cos t \\ y = 2\sin t \end{cases}$ $y \geq 1$	$y = \ln(x^2 - 1)$ $x \in [2; 3]$	$\rho = \varphi^2$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = 2(t - \sin t) \\ y = 2(1 - \cos t) \end{cases}$ 1 арка	$y = x^2 + 2$ $y = 1 - x$ $x = 0$ $x = 1$
3	$\rho \sin(\varphi + \frac{\pi}{4}) = \sqrt{2}$	$y^2 = x^3$ $x = 2$	$\rho = \cos 3\varphi$ $\rho = 3\cos 3\varphi$	$\begin{cases} x = 8\cos^3 t \\ y = 8\sin^3 t \end{cases}$ $x \geq 1$	$y = \sqrt{1-x^2} + \arcsin x$ $x \in [0; \frac{7}{9}]$	$\rho = 1 - \cos\varphi$	$\begin{cases} x = 3(\cos t + t\sin t) \\ y = 3(\sin t - t\cos t) \end{cases}$ $t \in [0; \frac{\pi}{2}]$	$y = \frac{3}{x}$ $y = \frac{x}{3}$ $x = 1$
4	$\rho = \sin 2\varphi$	$xy = 6$ $x + y = 7$	$\rho = 2\sin 4\varphi$ $\rho = 3\sin 4\varphi$	$\begin{cases} x = 2/t - \sin t \\ y = 2(1 - \cos t) \end{cases}$ $y \geq 3$	$y = \ln \cos x$ $x \in [0; \frac{\pi}{3}]$	$\rho = e^{2\varphi}$ $\varphi \in [0; \pi]$	$\begin{cases} x = 5\cos^3 t \\ y = 5\sin^3 t \end{cases}$	$y = x^2$ $y = \sqrt{x}$
5	$\rho = \frac{1}{1-2\sin\varphi}$	$y = \frac{x^2}{4}$ $y = \frac{8}{x^2+4}$	$\rho = \cos\varphi$ $\rho = \sqrt{3}\sin\varphi$	$\begin{cases} x = 4\cos t \\ y = 4\sin t \end{cases}$ $x \geq 2$	$y = \arcsin \sqrt{x} + \sqrt{x-x^2}$ $x \in [\frac{1}{4}; 1]$	$\rho = \cos^3\frac{\varphi}{3}$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = \frac{t^3}{3} - t \\ y = t^2 + 2 \end{cases}$ $t \in [0; 3]$	$y = (x-2)^2$ $y = x$ $y = 0$
6	$\rho = \cos^3\varphi$	$y = \cos x$ $y = x + 1$ $y = 0$	$\rho = \sqrt{3}\cos\varphi$ $\rho = -\sin\varphi$	$\begin{cases} x = 3\cos^3 t \\ y = 3\sin^3 t \end{cases}$ $x^2 + y^2 \leq 9$	$y = \frac{\ln x}{2} - \frac{x^2}{4}$ $x \in [1; 2]$	$\rho = 4(1 + \cos\varphi)$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = e^t \cos t \\ y = e^t \sin t \end{cases}$ $t \in [0; \pi]$	$y = e^x$ $y = e^{-x}$ $x = 1$
7	$\rho = \frac{5}{3-4\cos\varphi}$	$y = e^x$ $x + y = 1$ $x = 2$	$\rho = \cos 2\varphi$ $\rho = 2\cos 2\varphi$	$\begin{cases} x = \cos^3 t \\ y = 8\sin^3 t \end{cases}$ $y \geq 1$	$y = 2e^x + 1$ $x \in [\ln\frac{\sqrt{3}}{2}; \ln\frac{\sqrt{5}}{2}]$	$\rho = 4\cos\varphi$ иначе линия $y = x$	$\begin{cases} x = 8\sin t + 6\cos t \\ y = 6\sin t - 8\cos t \end{cases}$ $t \in [0; \frac{\pi}{4}]$	$y = x + 1$ $y = x - 1$ $y = 1$ $y = 2$

вар.	ностр.	S (дек.)	S (пск.)	S (парам.)	L (дек.)	L (пск.)	L (парам.)	$V_{ox, oy}$
8	$\rho = 2 + \cos \varphi$	$y = e^{-x}$ $y = x + 1$ $x = -1$	$\rho = \sin 2\varphi$ $\rho = 4 \sin 2\varphi$	$\begin{cases} x = 2 \cos t \\ y = \sin t \end{cases}$ $x \leq 1$	$y = \sqrt{x-x^2}$ $-\arccos \sqrt{x}$ $x \in [\frac{1}{9}; \frac{1}{4}]$	$\rho = 3\varphi^2$ $\varphi \in [0; \frac{\pi}{3}]$	$\begin{cases} x = 2 \cos t - \cos 2t \\ y = 2 \sin t - \sin 2t \end{cases}$ $t \in [0; \frac{\pi}{4}]$	$y = x + 1$ $x + y = 3$ $y = 1$
9	$\rho = \frac{1}{2 \sin \varphi + \cos \varphi}$	$y = 2^x$ $y = 2^{-x}$ $y = 2$	$\rho = 5$ $\rho = 5 \cos 3\varphi$	$\begin{cases} x = 8 \cos^3 t \\ y = 3 \sin^3 t \end{cases}$ $x \geq 3\sqrt{3}$	$y = \ln(2x^2 - 2)$ $x \in [2; 4]$	$\rho = 2(1 - \cos \varphi)$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = e^t (\cos t + \sin t) \\ y = e^t (\cos t - \sin t) \end{cases}$ $t \in [0; \pi]$	$y = 1 - x^2$ $y = x - 2$ $y \geq 0$ $y \leq 1$
10	$\rho = \cos 4\varphi$	$y = \sin x$ $y = 2 \sin x$ $x = \frac{\pi}{2}$	$\rho = a\varphi^2$ $y \geq \frac{x}{\sqrt{3}}$ $y \leq 2\sqrt{3}$	$\begin{cases} x = 5 \cos t \\ y = 4 \sin t \end{cases}$ $y \geq 2$	$y = \ln \sin x$ $x \in [\frac{\pi}{6}; \frac{\pi}{2}]$	$\rho = 3 \sin \frac{3\varphi}{3}$ $\varphi \in [0; \frac{\pi}{3}]$	$\begin{cases} x = 3/t - \sin t \\ y = 3/(1 - \cos t) \end{cases}$ 1 арха	$y = 2^x$ $y = 1$ $x = 2$
11	$\rho = \frac{1}{\cos \varphi - \sin \varphi}$	$y = \sin x$ $y = \cos x$ соедин. н.к.	$\rho = a(1 + \cos \varphi)$	$\begin{cases} x = 5/t - \sin t \\ y = 5/(1 - \cos t) \end{cases}$ $y \geq 5$	$y = \frac{x^3}{6} + \frac{1}{2x}$ $x \in [2; 3]$	$\rho = 2e^{3\varphi}$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = 2 \cos^3 t \\ y = 2 \sin^3 t \end{cases}$ в I кв.	$y = x + 1$ $x + y = 3$ $x = 0$
12	$\rho = \frac{1}{2 + \sin \varphi}$	$y = \frac{1}{x}$ в I кв. $y = x$ $y = \frac{x}{9}$	$\rho = a\varphi$ ограничен. перпен. к радиусу то II кв.	$\begin{cases} x = 4 \cos^3 t \\ y = 4 \sin^3 t \end{cases}$ $x^2 + y^2 \geq 4$	$y = \sqrt{1-x^2} + \arcsin x$ $x \in [-\frac{5}{2}; 0]$	$\rho = 2 \cos \frac{3\varphi}{3}$ $\varphi \in [-\frac{\pi}{4}; \frac{\pi}{4}]$	$\begin{cases} x = 5 \sin t + 2 \cos t \\ y = 2 \sin t - 5 \cos t \end{cases}$ $t \in [0; \pi]$	$y = x$ $y = x + 1$ $x = 0$ $y = 2$
13	$\rho^2 \cos 2\varphi = 4$	$y = x^2$ $y = -(x-3)(x-5)$ $y = 0$ $y = 1$	$\rho = 4 \sin \varphi$ $y \geq x $	$\begin{cases} x = 2 \cos^3 t \\ y = 8 \sin^3 t \end{cases}$ $y \geq 2\sqrt{2}$	$y = e^{-x} + 4$ $x \in [-\ln 24; -\ln 13]$	$\rho = 1 + \cos \varphi$ $\varphi \in [-\frac{\pi}{2}; \frac{\pi}{2}]$	$\begin{cases} x = e^t \cos t \\ y = e^t \sin t \end{cases}$ $t \in [-\frac{\pi}{4}; \frac{\pi}{2}]$	$y = \sqrt{x}$ $y = 2\sqrt{x}$ $y = x$
14	$\rho = 2 + \sin 2\varphi$	$y = x^2$ $y = 2 - x^3$ $x = -1$	$\rho = 8 \cos \varphi$ $x \leq 6$	$\begin{cases} x = 4 \cos t \\ y = 5 \sin t \end{cases}$ $x \geq 2\sqrt{2}$	$y = -\arcsin \sqrt{x} - \sqrt{x-x^2}$ $x \in [\frac{1}{4}; 1]$	$\rho = 3$ в I кв. $y = x $	$\begin{cases} x = (t^2 - 2) \sin t + 2t \cos t \\ y = (2 - t^2) \cos t + 2t \sin t \end{cases}$ $t \in [0; \pi]$	$y = 1 - x^2$ $y = x + 1$ $y = x - 1$ $y = 2$ I кв.

вар.	номер.	S (дек) ¹	S (пск) ²	S (парам.) ³	L (дек) ⁴	L (пск) ⁵	L (парам.) ⁶	$V_{ox, oy}$ ^{7,8}
15	$\rho = \sin 4\varphi$	$y = \frac{2}{x}$ $y = 2x$ $y = \frac{2}{x}$ I кв.	$\rho = 4(1 + \cos \varphi)$ $\rho \cos \varphi = 3$ (оправа)	$\begin{cases} x = 2 \cos t \\ y = 3 \sin t \end{cases}$ $\begin{cases} x = 2 \cos^3 t \\ y = 3 \sin^3 t \end{cases}$	$y = \ln(2 \cos x)$ $x \in [\frac{\pi}{6}; \frac{\pi}{4}]$	$\rho = 2\varphi^2$ $\varphi \in [0; \frac{\pi}{4}]$	$\begin{cases} x = e^t(\cos t + \sin t) \\ y = e^t(\cos t - \sin t) \end{cases}$ $t \in [0; \frac{\pi}{2}]$	$y = 1 - x^2$ $y = 2 - 2x^2$ $x \geq 0$
16	$\rho = \frac{2}{1 + 2 \sin \varphi}$	$y = x $ $y = 2 - x^2$	$\rho = a\sqrt{2 \cos 2\varphi}$ $\rho \leq a$	$\begin{cases} x = 3 \cos t \\ y = 4 \sin t \end{cases}$ $y \geq 2\sqrt{3}$	$y = \frac{\ln 3x}{2} - \frac{x^2}{4}$ $x \in [\frac{1}{2}; 1]$	$\rho = 3(1 - \cos \varphi)$ $\varphi \in [0; \frac{\pi}{4}]$	$\begin{cases} x = 4 \cos^3 t \\ y = 4 \sin^3 t \end{cases}$ $t \in \text{I кв.}$	$y = x$ $y = x + 2$ $y = 3$ $x = 0$
17	$\rho^2 = 4 \cos 2\varphi$	$y = 2 + x^3$ $y = x $ $x = 1$	$\rho = 4 \sin 3\varphi$ $\rho \geq 2$	$\begin{cases} x = 4(t - \sin t) \\ y = 4(1 - \cos t) \end{cases}$ $y \geq 6$	$y = \ln(3x^2 - 3)$ $x \in [2; 5]$	$\rho = 3e^\varphi$ $\varphi \in [0; \frac{\pi}{4}]$	$\begin{cases} x = 2(\cos t + t \sin t) \\ y = 2(\sin t - t \cos t) \end{cases}$ $t \in [0; \pi]$	$y = 4x - x^2$ $y = x$
18	$\rho = 2 + \cos 2\varphi$	$y = 2 x $ $y = x^2$	$\rho = a(1 + \sin \varphi)$ $\rho = a$ внутренний область	$\begin{cases} x = 4 \cos t \\ y = 3 \sin t \end{cases}$ $x \geq 2\sqrt{3}$	$y = e^{2x} - 1$ $x \in [\frac{1}{4} \ln \frac{3}{4}; \frac{1}{4} \ln 2]$	$\rho = 4 \sin^3 \frac{\varphi}{3}$ $\varphi \in [\frac{\pi}{6}; \frac{\pi}{3}]$	$\begin{cases} x = 5 \cos^2 t \\ y = 5 \sin^2 t \end{cases}$ $t \in [0; \frac{\pi}{2}]$	$y = x$ $x + y = 4$ $y = 3$
19	$\rho = \frac{1}{2 \cos \varphi - 2 \sin \varphi}$	$y = x^3$ $y = -x^3$ $y = 2 - x^2$	$\rho = \sqrt{6 \cos 2\varphi}$ $\rho = 2 \cos \varphi$ (вне)	$\begin{cases} x = 2 \cos^3 t \\ y = 2 \sin^3 t \end{cases}$ $x^2 + y^2 \leq 4$	$y = \sqrt{1 - x^2} - \arccos x + 4$ $x \in [-\frac{8}{9}; \frac{7}{9}]$	$\rho = 3(1 + \cos \varphi)$ $\varphi \in [0; \frac{\pi}{4}]$	$\begin{cases} x = 5(2 \cos t - \cos t) \\ y = 5(2 \sin t - \sin t) \end{cases}$ $t \in [0; \frac{\pi}{6}]$	$y = x$ $y = x + 2$ $y = 2$ $y = 3$
20	$\rho = 3 \sin \varphi$	$y = 1 - x^2$ $y = x - 1$	$\rho = 2(1 + \cos \varphi)$ $y \geq -\frac{x}{2} + 2$	$\begin{cases} x = 8 \cos^3 t \\ y = 10 \sin^3 t \end{cases}$ $x \geq 2\sqrt{2}$	$y = \ln(3 \sin x)$ $x \in [\frac{\pi}{4}; \frac{\pi}{3}]$	$\rho = 3 \cos^3 \frac{\varphi}{3}$ $\varphi \in [0; \frac{\pi}{3}]$	$\begin{cases} x = \frac{t^3}{3} - t \\ y = t^2 + 5 \end{cases}$ $t \in [0; 2]$	$y = \sqrt{x}$ $y = 2\sqrt{x}$ $x = 1$
21	$\rho = \sin^2 \frac{\varphi}{2}$	$y = x^3$ $y = 2x^3$ $x = 1$	$\rho = a \cos^3 \varphi$ $\rho = a \cos \varphi$ (вне)	$\begin{cases} x = 8(t - \sin t) \\ y = 8(1 - \cos t) \end{cases}$ $y \geq 8$	$y = \arccos \sqrt{x} - \sqrt{x - x^2}$ $x \in [\frac{1}{25}; \frac{1}{9}]$	$\rho = 6 \sin \varphi$ норме миним $y = x\sqrt{3}$	$\begin{cases} x = (t^2 - 2) \sin t + 2t \cos t \\ y = (2 - t^2) \cos t + 2t \sin t \end{cases}$ $t \in [0; \frac{\pi}{4}]$	$x + y = 1$ $x + y = 2$ $y = 0$ $x = 0$

вар.	полюс.	S (полюс)	S (полюс)	S (параметр)	L (полюс)	L (полюс)	L (параметр)	$V_{ax, ay}$
22	$\rho = 2 + \sin \varphi$	$y = x^3$ $y = x^3 + 2$ $x + y = 2$ $y = -x$	$\rho = a(1 + \cos \varphi)$ $\rho = -a \cos \varphi$ $\varphi = \frac{\pi}{4}$ в кр	$\begin{cases} x = 6 \cos t \\ y = 3 \sin t \end{cases}$ $x \leq 3\sqrt{3}$	$y = \frac{x^2}{4} - \frac{\ln(x)}{6}$ $x \in [1; 3]$	$\rho = 4\varphi^2$ $\varphi \in [0; \frac{\pi}{6}]$	$\begin{cases} x = 6(t - \sin t) \\ y = 6(1 - \cos t) \end{cases}$ 1 апс	$y = 2x$ $x + y = 3$ $y = 0$
23	$\rho = \frac{9}{4 + 5 \cos \varphi}$	$y = \sqrt{x}$ $y = 2\sqrt{x}$ $y = x$	$\rho = -2\sqrt{3} \cos \varphi$ $\rho = 2 \sin \varphi$ выступ в кр	$\begin{cases} x = 2 \cos^3 t \\ y = 2 \sin^3 t \end{cases}$ $x^2 + y^2 \geq 1$	$y = \sqrt{1 - x^2} + \arcsin x - 2$ $x \in [\frac{1}{3}; \frac{1}{2}]$	$\rho = 5(1 - \cos \varphi)$	$\begin{cases} x = 6 \sin t + 5 \cos t \\ y = 5 \sin t - 6 \cos t \end{cases}$ $t \in [0; \pi]$	$y = 2\sqrt{x}$ $y = x$
24	$\rho = 3 \sin^2 \frac{\varphi}{2}$	$y = 3^x$ $y = 3$ $x + y = 1$	$\rho = 1 + \cos \varphi$ выступ $\rho = 1 - \cos \varphi$ в кр	$\begin{cases} x = 7 \cos t \\ y = 2 \sin t \end{cases}$ $y \geq \sqrt{3}$	$y = -\ln \cos x$ $x \in [\frac{\pi}{6}; \frac{\pi}{3}]$	$\rho = 2e^{5\varphi}$ $\varphi \in [\frac{\pi}{6}; \frac{\pi}{3}]$	$\begin{cases} x = 3 \cos^2 t \\ y = 3 \sin^2 t \end{cases}$ $t \in [0; \frac{\pi}{2}]$	$y = 1 - x^2$ $x + y = 2$ $x = 0$ $y = 0$
25	$\rho^2 \sin 2\varphi = 4$	$y = \sqrt{x}$ $y = -2x^3$ $x = 1$	$\rho = 4$ $\rho = 4 \sin \varphi$	$\begin{cases} x = 4 \cos^3 t \\ y = 8 \sin^3 t \end{cases}$ $y \geq 3\sqrt{3}$	$y = 1 + e^{-2x}$ $x \in [-\frac{1}{4} \ln \frac{15}{4}; -\frac{1}{4} \ln \frac{3}{4}]$	$\rho = 4 \cos^3 \frac{\varphi}{3}$ $\varphi \in [-\frac{\pi}{2}; \frac{\pi}{2}]$	$\begin{cases} x = 3/2 \cos t - \cos 2t \\ y = 3/2 \sin t - \sin 2t \end{cases}$ $t \in [0; \frac{\pi}{4}]$	$y = 2x$ $y = \frac{x}{2}$ $x + y = 3$
26	$\rho \cos(\varphi + \frac{\pi}{4}) = \sqrt{2}$	$y = \frac{1}{1+x^2}$ $y = \frac{ x }{2}$	$\rho = 4(1 + \cos \varphi)$ $\rho \cos \varphi = 3$ клетка	$\begin{cases} x = 5 \cos t \\ y = 3 \sin t \end{cases}$ $\begin{cases} x = 5 \cos^3 t \\ y = 3 \sin^3 t \end{cases}$	$y = \arcsin \sqrt{x} + \sqrt{x - x^2}$ $x \in [\frac{9}{25}; 1]$	$\rho = 5 \sin^3 \frac{\varphi}{3}$ $\varphi \in [0; \frac{\pi}{2}]$	$\begin{cases} x = e^t \cos t \\ y = e^t \sin t \end{cases}$ $t \in [0; \pi]$	$y = \frac{x}{2}$ $x + y = 3$ $y = 0$
27	$\rho = \frac{3}{2 + \cos \varphi}$	$y = \sqrt{x}$ $x + y = 2$ $y = 0$	$\rho = \sqrt{6} \cos \varphi$ $\rho = 2 \cos \varphi$ выступ в кр	$\begin{cases} x = 8 \cos^3 t \\ y = 8 \sin^3 t \end{cases}$ $y \geq 1$	$y = \ln(1 - x^2)$ $x \in [0; \frac{1}{2}]$	$\rho = 4(1 + \cos \varphi)$ $\varphi \in [\frac{\pi}{4}; \frac{\pi}{2}]$	$\begin{cases} x = e^t (\cos t + \sin t) \\ y = e^t (\cos t - \sin t) \end{cases}$ $t \in [\frac{\pi}{6}; \frac{\pi}{3}]$	$y = 2 + 1$ $y = x - 1$ $x + y = 1$ $x + y = 5$
28	$\rho \sin(\varphi + \frac{\pi}{3}) = 1$	$y = 2^x$ $2y + x = 2$ $x = 2$	$\rho = a \sin 2\varphi$ в кр $\rho = a$ $y \geq x $	$\begin{cases} x = 10(t - \sin t) \\ y = 10(1 - \cos t) \end{cases}$ $y \geq 15$	$y = \frac{x^4}{8} + \frac{1}{4x^2}$ $x \in [1; 3]$	$\rho = 4 \sin \varphi$ выступ в кр $\rho = 2$	$\begin{cases} x = 3 \cos^3 t \\ y = 3 \sin^3 t \end{cases}$	$y = \sqrt{x}$ $y = \frac{x}{2}$