1510. $y = \frac{e^x}{1+x}$. 1511. $y = \sqrt{1-e^{-x^2}}$.

1512. $y = \frac{\ln x}{\sqrt{x}}$. 1513. $y = \ln\left(x+\sqrt{x^2+1}\right)$.

1514. $y = \sqrt{x^2+1}\cdot\ln\left(x+\sqrt{x^2+1}\right)$.

1515. $y = \frac{\arcsin x}{\sqrt{1-x^2}}$. 1516. $y = x+\operatorname{arctg} x$.

1517. $y = \frac{x}{2}+\operatorname{arcctg} x$. 1518. $y = x\operatorname{arctg} x$.

1519. $y = \arcsin\frac{2x}{1+x^2}$. 1520. $y = \arccos\frac{1-x^2}{1+x^2}$.

1521. $y = (x+2)e^{1/x}$. 1522. $y = 2\sqrt{x^2+1}-\sqrt{x^2-1}$.

1523*. $y = \ln\frac{x^2-3x+2}{x^2+1}$.

1524. $y = a\arcsin\frac{x}{a}-\sqrt{a^2-x^2}$ $(a>0)$.

1525. $y = \arccos\frac{1-x}{1-2x}$. 1526. $y = x^x$.

1527*. $y = x^{1/x}$. 1528. $y = (1+x)^{1/x}$.

1529*. $y = x\left(1+\frac{1}{x}\right)^x$ $(x>0)$.

1530*. $y = \frac{e^{1/1-x^2}}{1+x^2}$ (без исследования вогнутости).

Построить кривые, заданные в параметрической форме:

1531. $x = \frac{(t+1)^2}{4}$, $y = \frac{(t-1)^2}{4}$.

1532. $x = 2t-t^2$, $y = 3t-t^3$.

1533*. $x = \frac{t^2}{t-1}$, $y = \frac{t}{t^2-1}$.

1534. $x = \frac{t^2}{1-t^2}$, $y = \frac{1}{1+t^2}$.

1535. $x = t+e^{-t}$, $y = 2t+e^{-2t}$.

1536. $x = a\cos 2t$, $y = a\cos 3t$ $(a>0)$.