グラフ４５題　　*は凹凸，変曲点も調べよ。　　（　　）組（　　）番　名前（　　）

(1)* $y=x^3(x-2)^3$

(2)* $y=\dfrac{x}{x^2+1}$

(3)* $y=\dfrac{3x^2}{x^2+2}$

(4) $y=\dfrac{x^2-3x}{x^2+3}$

(5) $y=\dfrac{x^2-x+1}{x^2+x+1}$

(6) $y=\dfrac{2x+5}{x^2-4}$

(7)* $y=\dfrac{x^2+1}{x^2-1}$

(8)* $y=\dfrac{x^2}{x-1}$

(9)* $y=\dfrac{x^3+2}{x}$

(10)* $y=\dfrac{x^3}{x^2-1}$

(11)* $y=(x^2+3)\sqrt{2-x}$

(12)* $y=\sqrt{x}+\sqrt{4-x}$

(13)* $y=x\sqrt{3-x}$

(14)* $y=(1-\sqrt{x})^2$

(15)* $y=x+\sqrt{1-x^2}$

(16)* $y=x\sqrt{2-x^2}$

(17)* $y=\dfrac{x+1}{\sqrt{x^2+1}}$

(18)* $y=(1-x)\sqrt{x-x^2}$

(19)* $y=\dfrac{\sqrt{x+2}}{x-1}$

(20) $y=\sin x(1+\cos x)\quad[0,2\pi]$

(21)* $y=\sin^2 x\quad[0,2\pi]$

(22)* $y=x+2\cos x\quad[-\pi,\ \pi]$

(23)* $y=2x-\tan x\quad\left[-\dfrac{\pi}{2},\ \dfrac{\pi}{2}\right]$

(24) $y=\cos x(1+\sin x)\quad[0,2\pi]$

(25)* $y=x+2\sin x\quad[0,\ 2\pi]$

(26)* $y=2\sin x+\cos^2 x\quad[0,2\pi]$

(27) $y=\sin 2x+2\cos x\quad[0,2\pi]$

(28) $y=2\sin x+\cos 2x\quad[0,2\pi]$

(29) $y=\sin^2 x\cos 2x\quad[0,\ \pi]$

(30)* $y=e^{1-x^2}$

(31)* $y=x^2e^{-x}$
ただし，$\lim_{x\to+\infty}x^2e^{-x}=0$

(32)* $y=\dfrac{e^x}{x}$

(33)* $y=xe^{-\frac{x^2}{2}}$
ただし，$\lim_{x\to\pm\infty}xe^{-\frac{x^2}{2}}=0$

(34)* $y=x^4e^x$
ただし，$\lim_{x\to-\infty}x^4e^x=0$

(35)* $y=e^x+2e^{-x}$

(36)* $y=e^{\frac{1}{x}}$

(37)* $y=\dfrac{e^x}{1+e^x}$

(38)* $y=x+1-\log x$

(39)* $y=2\log x+x^2-5x+5$

(40)* $y=x^2+\log(2-x^2)$

(41)* $y=\dfrac{x}{\log x}$
ただし，$\lim_{x\to+0}\dfrac{x}{\log x}=0$

(42)* $y=\dfrac{\log x}{x}$
ただし，$\lim_{x\to+\infty}\dfrac{\log x}{x}=0$

(43)* $y=e^x\sin x\quad[0,2\pi]$

(44)* $y=e^{-x}\cos x\quad[0,2\pi]$

(45)* $y=x^x\quad(x>0)$
ただし，$\lim_{x\to+0}x^x=1$