2018 3

$p:x<-3$ $x>1$ $q:x>a$ $\neg p$ $\neg q$

( )

$a\geq 1$ $a\leq 1$ $a\geq -1$ $a\leq -3$

$f(x+1)$ $(-2,0)$ $f(2x-1)$ ( )

$(-1,0)$ $(-\frac{1}{2},\frac{1}{2})$ $(0,1)$ $(-\frac{1}{2},0)$

$xy-3=x+y$ $x>1$ $y(x+8)$ ( )

$f(x)=\frac{x}{2+2x}$

$f(\frac{1}{2019})+f(\frac{1}{2018})+\cdots+f(\frac{1}{2})+f(1)+f(2)+\cdots+f(2018)+f(2019)=$ ( )

$\frac{2019}{2}$ $\frac{4037}{4}$ $\frac{4039}{4}$

$f(x)$ $g(x)$ $f(x)-g(x)=2^x$ ( )

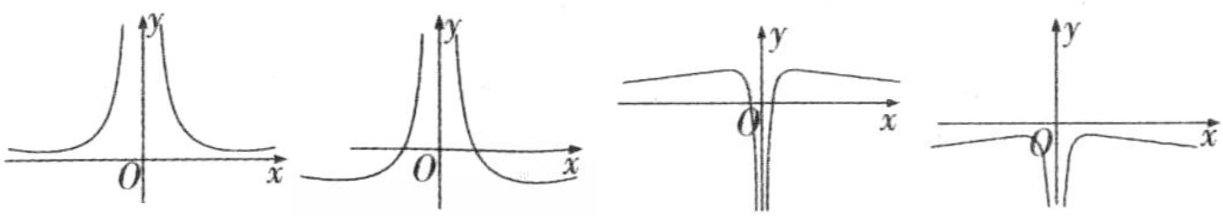
$f(2)<f(3)<f(0)$ $f(0)<f(3)<f(2)$

$f(2)<f(0)<f(3)$ $f(0)<f(2)<f(3)$

$f(x)=\begin{cases}(a-2)x+3, x\leq 1\\ \frac{2a}{x}, x>1\end{cases}$ $(-\infty,+\infty)$ ( )

$(0,1)$ $(0,1]$ $(0,2)$ $(0,2]$

$f(x)=\frac{\ln x^2}{|x|}+1$ ( )



48^7 $a(0\leq a<7)$ $\left(x-\frac{a}{x^2}\right)^6$ x^{-3} ( )

4 320 $-$4 320 $-$20

8:00 8:20 8:40 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$;

9:00 9:20 9:40 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{1}{4}$;

8:10

( )

$f(x)=|x-2|+1$ $g(x)=kx.$ $f(x)=g(x)$

( )

$(0,\frac{1}{2})$ $(\frac{1}{2},1)$ $(1,2)$ $(2,+\infty)$

$f(x)=\sin x+x^3-ax$ ( )

$f(x)$ $f(x)$ $a\leq 1$

$a=-3$ $f(x)$ $a=3$ $f(x)$

$f(x)=e^x$ $g(x)=\ln\frac{x}{2}+\frac{1}{2}$ $y=m$ ( )

$|AB|$ $2+\ln 2$

$f(x)-g(x)+m$

$\exists m$ $f(x)$ $g(x)$

$\exists m$ $f(x)$ $g(x)$

( )

$y(min)$					

$\hat{y}=0.6x+54$

$\begin{cases} x+2y-3\leqslant 0, \\ x+3y-3\geqslant 0, \\ y\leqslant 1, \end{cases}$ $z=3x+2y$ $a+b=m$

$\frac{1}{a}+\frac{4}{b}$ ______

$f(x)=x^3-2x+e^x-\frac{1}{e^x}$ $f(a-1)+f(2a^2)\leqslant 0$

$f(x)=\begin{cases} |x+1|, x\leqslant 0, \\ |\log_2 x|, x>0, \end{cases}$ $f(x)=a$ x_1,x_2,x_3,x_4

$x_1<x_2<x_3<x_4$ $x_3(x_1+x_2)+\frac{1}{{x_3}^2x_4}$

$f(x)=\left(a-\frac{1}{2}\right)x^2+\ln x(a\in R)$

(1) $a=1$ $f(x)$ $[1,e]$

(2) $f(x)$

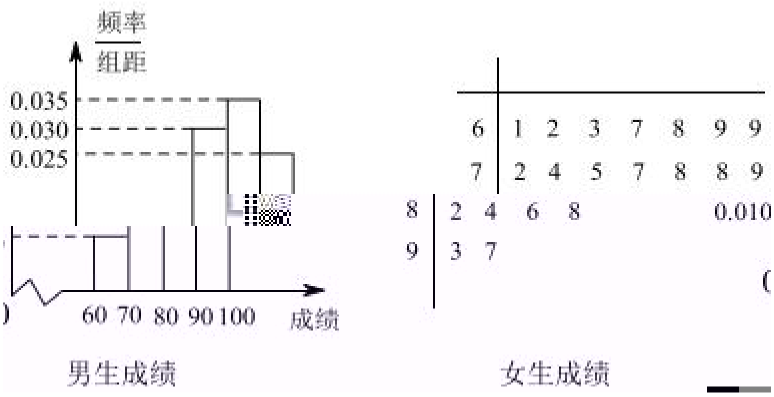
$f(x)$ $x\in R$ $f(x)>0$ $x<0$ $f(x)>1.$

$x,y\in R$ $f(x+y)=f(x)f(y)$

(1) $f(0)$

(2) $f(x)$

(3) $f(kt^2+kt)-f(t-k)=0$ $t\in(0,+\infty)$



(1) ( )

95%

(2)

$K^2=\frac{n(ad-bc)^2}{(a+c)(b+d)(a+b)(c+d)}$ $n=a+b+c+d$

$P(K^2\geq k_0)$	0.100	0.050	0.025	0.010	0.005	0.001
k_0	2.706	3.841	5.024	6.635	7.879	10.828

$g(x) = x^2 - 2ax + 1$h• ▯

2018

D

ˆ

(1) $(0.035+0.025)\times 10=0.6$

$20\times 0.6=12$

2×2

$\because K^2=\frac{40(12\times 14-6\times 8)^2}{20\times 20\times 18\times 12}\approx 6.667>3.841$

$\therefore$ 95%

(2) $\frac{12}{20}=\frac{3}{5}$

$\frac{6}{20}=\frac{3}{10}$

$P(X=0)=(1-\frac{3}{5})^2\times(1-\frac{3}{10})^2=\frac{49}{625}$

$P(X=1)=C_2^1\times\frac{3}{5}\times\frac{2}{5}\times(\frac{7}{10})^2+(\frac{2}{5})^2\times C$

(1) $g(x)=x^2-2ax+1$ $x=a$

$g(x)$ $g(x+1)$ $y=g(x+1)$

$a=1$

$f(x)=\frac{g(x)}{x}=x+\frac{1}{x}-2,x\neq 0$

(2) $f(\ln x)-m\ln x\geqslant 0$ $\ln x+\frac{1}{\ln x}-2-m\ln x\geqslant 0$

$x\in(1,e^2]$ $\ln x\in(0,2]$

$t=\frac{1}{\ln x}\in[\frac{1}{2},+\infty)$, $m\leqslant t^2-2t+1=(t-1)^2$

$(t-1)^2{}_{min}=0$

$m\leq 0$

$(-\infty,0]$

(3) $f(|2^x-1|)+k\cdot\frac{2}{|2^x-1|}-2=0$

$|2^x-1|+\frac{1}{|2^x-1|}-2+k\cdot\frac{2}{|2^x-1|}-2=0$

$|2^x-1|^2-4|2^x-1|+1+2k=0$

$r=|2^x-1|(r>0)$ $r^2-4r+1+2k=0$

$f(|2^x-1|)+k\cdot\frac{2}{|2^x-1|}-2=0$

$r^2-4r+1+2k=0$ r_1,r_2 $0<r_1<1,r_2>1$ $0<r_1<1,r_2=1$

$h(r)=r^2-4r+1+2k$

$0<r_1<1,r_2>1$ $\begin{cases}h(0)=1+2k>0\\h(1)=-2+2k<0\end{cases}$ $-\frac{1}{2}<k<1$

$r_2=1$ $k=1$ $h(r)=r^2-4r+3$ $r_1=3$

$(-\frac{1}{2},1)$

(1) $y = c \cdot d^x$

(2) $y = c \cdot d^x$ $lgy = \lg(c \cdot d^x) = lgc + xlgd$

$lgy = v$ $\therefore v = lgc + xlgd$

$\bar{x} = 4, \bar{v} = 1.54$ $\sum_{i=1}^{7} x_i^2 = 140$

$\therefore lgd = \frac{\sum_{i=1}^{7} x_i v_i - 7\bar{x}\bar{v}}{\sum_{i=1}^{7} x_i^2 - 7\bar{x}^2} = \frac{50.12 - 7\times4\times1.54}{140 - 7\times4^2} = \frac{7}{28} = 0.25$

$(4,1.54)$ $v = lgc + xlgd$ $lgc = 0.54$

$\therefore \hat{v} = 0.54 + 0.25x$

$\therefore \lg\hat{y} = 0.54 + 0.25x$

$\therefore y$ $\hat{y} = 10^{0.54+0.25x} = 3.47 \times 10^{0.25x}$

$x = 8$ $\hat{y} = 3.47 \times 10^2 = 347$

( ) $a = \frac{1}{2}$ $f(1) = 2$

$f'(x) = x + 1 - \frac{4}{x}, f'(1) = -2$

$y - 2 = -2(x - 1)$ $y = -2x + 4$

( )$f'(x) = 2a(x + 1) - \frac{4}{x} = \frac{2(ax^2 + ax - 2)}{x}, x > 0$

$g(x) = ax^2 + ax - 2$

$a = 0$ $f'(x) = -\frac{4}{x} < 0$ $f(x)$ $[1,e]$

$[f(x)]_{max} = f(1) = 0 < 1$

$a < 0$ $g(x) = ax^2 + ax - 2$ $x = -\frac{1}{2}$ $g(0) = -2 < 0$

$x \in [1,e]$ $g(x) < 0$ $f'(x) < 0$ $f(x)$ $[1,e]$

$[f(x)]_{max} = f(1) = 0 < 1$

$a > 0$ $g(x) = ax^2 + ax - 2$ $x = -\frac{1}{2}$ $g(0) = -2 < 0$

$g(x) = ax^2 + ax - 2$ $(0, +\infty)$ $x_0 \in (0, +\infty)$

$g(x_0) = 0$ $f'(x_0) = 0$

$0 < x < x_0$ $g(x) < 0$ $f'(x) < 0$ $f(x)$

$x > x_0$ $g(x) > 0$ $f'(x) > 0$ $f(x)$

$[1,e]$ $[f(x)]_{max} = max\{f(1), f(e)\}$

$\begin{cases} f(1) < 1 \\ f(e) < 1 \end{cases}$ $\begin{cases} 4a < 1 \\ a(e+1)^2 - 4 < 1 \end{cases}$ $a < \frac{1}{4}$. $0 < a < \frac{1}{4}$

$(-\infty, \frac{1}{4})$