2018

601 ; **A**

8 **4** **32**

1 $J=\lim_{n\to\infty}\frac{1}{n}\int_{\frac{1}{n}}^{1}\frac{\cos t}{t^2}dt=$

A 0. B 1. C ∞. D $\frac{1}{2}$.

2 $f(x)$ $[a,b]$, $f(a)=f(b)$, $f(x)$, (a,b) ( )

A . B ξ, $f'(\xi)=0$.

C . D .

3 $f(x)=\begin{cases}x^2+ax+1, & x\le 0\\ e^x+b\sin x^2, & x>0\end{cases}$ $x=0$ a,b

A $a=1,\ b=1$ B $a=1,\ b=\frac{1}{2}$ C $a=1,\ b=2$ D $a=2,\ b=1$

4 $f(x,y)$ $f(x,y)(ydx+xdy)$ $u(x,y)$

A $\frac{\partial f}{\partial x}=\frac{\partial f}{\partial y}$ B $x\frac{\partial f}{\partial x}=y\frac{\partial f}{\partial y}$ C $-x\frac{\partial f}{\partial x}=y\frac{\partial f}{\partial y}$ D $x\frac{\partial f}{\partial y}=y\frac{\partial f}{\partial x}$

5

$\int_0^{+\infty}\frac{dx}{x^2+4x+3}$. $\int_0^{+\infty}(e^{-x}+\frac{x}{1+x^2})dx$. $\int_0^{+\infty}x^3e^{=x^2}dx$. $\int_0^{\frac{\pi}{2}}\frac{dx}{\sin x}$.

A B C D

D $x=0,y=0,x+y=1$

$J=\iint_D e^{(x+y)^2}d\sigma=$

A $e+1$ B $e-1$ C $\frac{e+1}{2}$ D $\frac{e-1}{2}$

7 $f(x)=\int_0^{x^2}\frac{\ln(1+\sin^2 t)}{t}dt$ $g(x)=\int_0^{1-\cos x}\tan t^2dt$ $x\to 0$ $f(x)$ $g(x)$

A . B . C . D .

8 $y'' - 3y' + 2y = 2xe^x$

A $(Ax+B)e^x$ B Axe^x C Ax^2e^x D $x(Ax+B)e^x$

6 **4** **24**

9 $\lim\limits_{x\to 0}(1+3x)^{\frac{2}{\sin x}} =$ ________ .

10 $(3y-2x)dy = ydx$ ____________________________ .

11 $f(x,y) = \int_{\frac{y}{x}}^{x^2+y^2} e^{t^2}\,dt$ $df(x,y) =$ ______________________________________ .

12 $\dfrac{\ln x}{x}$ $f(x)$ $x>0$

$\int x^2 f'(x)dx =$ ________________________ . .

13 D $A(1,1),\ B(-1,1),\ C(-1,-1)$

$I = \iint\limits_D [\sqrt{1+2x^2+3y^2}\sin(xy)+4]dxdy =$ ___________ .

14 $\begin{cases} x = 1+t^2 \\ y = t^3 \end{cases}$ $t=2$ ____________________

8 **94**

15 12

$$f(x) = \begin{cases} \lim\limits_{n\to\infty}\left(1+\dfrac{2nx+x^2}{2n^2}\right)^{-n}, & x\neq 0, \\ \lim\limits_{n\to\infty}\left[\dfrac{n}{(n+1)^2}+\dfrac{n}{(n+2)^2}+ \quad + \dfrac{n}{(n+n)^2}\right], & x=0, \end{cases}$$ $f(x)$.

16 12

$$I = \int_{\frac{1}{4}}^{\frac{1}{2}} dy \int_{\frac{1}{2}}^{\sqrt{y}} e^{\frac{y}{x}} dx + \int_{\frac{1}{2}}^{1} dy \int_{y}^{\sqrt{y}} e^{\frac{y}{x}} dx .$$

17 12

$f(x)$ $x=1$ $\lim\limits_{x\to 0}\dfrac{\ln[f(x+1)+1+3\sin^2 x]}{\sqrt{1-x^2}-1} = -4.$

1 $f(1), \lim\limits_{x\to 0}\dfrac{f(x+1)}{x^2}$ $f'(1)$ 2 $f''(1)$ $f''(1)$.

12

$z = f(xy, \frac{x}{y})$ f $\frac{\partial^2 z}{\partial x^2}$

12

$f(x)$ $[0, 1]$ $f(1) = 2\int_0^{\frac{1}{2}} xf(x)dx$ .26 674.28 49Tm 974.26 674.28 494001