

2017

837 ;

A

045104

1 8 4 32

$f(x)$ x_0 $\Delta x \rightarrow 0$ $\Delta y - dy$ Δx

A B C D

2 $y = x + e^{-x}$

A B C

D

3 $\lim_{(x,y) \rightarrow (0,0)} \frac{xy}{x^2 + 2y^2}$

A $\frac{1}{2}$ B 1 C 2 D

4 $f(x, y)$ (x_0, y_0) $f_x(x_0, y_0)$ $f_y(x_0, y_0)$ $f(x, y)$

(x_0, y_0)

A B C

D

5

A B

C $g_1(x)$ $g_2(x)$ $f(x)$ $g_1(x) - g_2(x) = c$

D $f_1(x)$ $f_2(x)$ $f_1(x) = f_2(x)$

6 $f(-x) = f(x), x \in (-\infty, +\infty)$ $(-\infty, 0)$ $f'(x) > 0$ $f''(x) < 0$

$(0, +\infty)$ ()

(A) $f'(x) > 0, f''(x) < 0$; (B) $f'(x) > 0, f''(x) > 0$;

(C) $f'(x) < 0, f''(x) < 0$; (D) $f'(x) < 0, f''(x) > 0$

7 $f_x(x_0, y_0)$ $\lim_{h \rightarrow 0} \frac{f(x_0 + h, y_0) - f(x_0 - h, y_0)}{h} =$

A 0 B $f_x(x_0, y_0)$ C $2f_x(x_0, y_0)$ D $\frac{1}{2}f_x(x_0, y_0)$

8 $\vec{a}, \vec{b}, \vec{c}$ $\vec{a} + \vec{b} + \vec{c} = \vec{0}$ $\vec{a} \cdot \vec{b} + \vec{b} \cdot \vec{c} + \vec{c} \cdot \vec{a}$
 A -1 B $-\frac{3}{2}$ C $\frac{3}{2}$ D 1

7 4 28

1 $f'\left(x + \frac{1}{x}\right) = x^2 + \frac{1}{x^2}$ $f(x) =$ _____

2 $\lim_{x \rightarrow \infty} f'(x) = k$ $\lim_{x \rightarrow \infty} [f(x+a) - f(x)] =$ _____

3 $z = e^{\sin(x^2+y^2)}$ $dz =$ _____

4 $\int_0^4 dy \int_{\frac{y^2}{4}}^{y^2} f(x, y) dx =$ _____

5 $(xy^2 + x)dx + (y - x^2y)dy = 0$ _____

6 $\begin{cases} x = 1 + t^2 \\ y = t^3 \end{cases} \quad t = 2$ _____

7 y -1 $(2,0,0)$ $(2,1,3)$

9 90

1 5 $\lim_{(x,y) \rightarrow (0,0)} \frac{\sqrt{xy+1} - 1}{xy}$

2 5 $\int_2^y e^t dt + \int_0^x e^{-t} dt = 0$ y x $\frac{dy}{dx}$

3 8 $\int e^{\sqrt[3]{x+1}} dx$

4 8 $\int_{-1}^1 x^9 (e^{x^2} + x) dx$

5 8 $z = f(u, v, t) = uv + \sin t$ $u = e^t, v = \cos t$ $\frac{dz}{dt}$

6 12 $f(x, y) = x^2(2 + y^2) + y \ln y$.

7 12 $y''' - 8y' + 16y = e^{4x}$.

