

本文系 2020 年福建省电化教育馆课题《基于动态数学技术环境高中实验教学的实践研究》  
(课题编号闽教电馆 KT2042) 研究成果.

2020

2020 | 21  $f(x) = a^{x-1} - x + a$

1  $a =$   $y = f(x)$  ( $f(\ )$ )

2  $f(x)$   $a$

$x$   $x$

=

1 — — —



$$x > a \quad f'(x) = a^{x-a} - \frac{1}{x} = \quad x \in x \quad f'(x) <$$

$$x \in x + \infty \quad f'(x) > \quad a^{x-a} = \frac{1}{x} \quad a+x - = - x$$

$$f(x) = f(x) = a^{x-a} - x + a$$

$$= \frac{1}{x} + a+x - + a \quad a - + \sqrt{\frac{1}{x} \cdot x} = a +$$

$$f(x) > f(x)$$

$$< a < f = a + a < a < f < f(x)$$

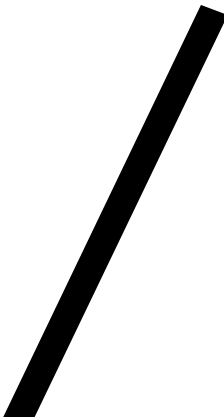
$$a \quad [ +\infty).$$

$$1 \quad f(x) \quad f(x) \quad f(x)$$

$$f(x) \quad +\infty \quad a = < a <$$

$$a > \quad f' - f' < \quad f(x) \quad x \quad f'(x) = ae^{x-a} - \frac{1}{x} =$$

$$f(x) = f(x) \quad f(x) \quad a$$



$$a^{x-} + a+x- \quad x+x= \quad x+ \quad x \quad g(x)= \quad x+x$$

$$a \quad x-x+ \quad h(x)= \quad x-x+ \quad h(x)_{max}$$

$$a \quad a$$

$h x$

$$y = x^x,$$

$$y = x-x \quad y = \frac{x}{x} \quad y = x+ \quad x \quad y = x \quad x \quad y = \frac{x}{x}$$

$$3 \quad g(x) = x+ \quad x \quad g(x) \quad ( +\infty) \quad g( ) = .$$

$$f(x) \quad x = \quad ( )$$

$$H(x) = \frac{x-x}{x+} \quad x \in ( +\infty) \quad H'(x) = \frac{(x-)[^x(x- ) x+ ]}{(x+ )}$$

$$K(x) = ^x(x- ) x+$$

$$K'(x) = x ^x + \quad K(x) ( +\infty) \quad K(x) > K( ) =$$

$$< x < \quad H'(x) < \quad x > \quad H'(x) >$$

$$H(x) ( ) \quad ( +\infty) \quad H(x) = H( ) \text{ ---}$$

$$x = \quad y = \frac{^x x + ( - ^x)x}{-x -}$$

$$m \quad \left( \frac{-}{-} \right)$$

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2

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[1]

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2019

[J].

2019(11): 16-18.

[2]

J

2019(8): 55-56