

:	: §1.1	§2.3	:
	: §2.1	§2.3	:

A1. $f(x) = x^{-v}, v \in \mathbb{N}^*.$ f
 $\mu \quad \mathbb{R}^* \quad f'(x) = -vx^{-v-1}.$

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A2. $f: A \rightarrow \mathbb{R}.$ $\mu \quad \mu \quad (\quad) \mu \quad , (\quad)$

5

3.

$\mu \mu$

) $f \circ g, g \circ f$
 $f \circ g = g \circ f.$

) $\mu \quad z_1, z_2 \quad z_1 < z_2$
 $|\operatorname{Re}(z_1)| < |\operatorname{Re} z_2|.$

) $\lim_{x \rightarrow -\infty} x \mu \frac{1}{x} = 0.$

) $\mu \mu \quad y=x. \quad f, f^{-1}$

) $\mu \mu \quad f: \mathbb{R} \rightarrow \mathbb{R} \quad y=x. \quad 1-1, \quad \mu \quad f$
 $\mu \quad \mu$

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$\mu \quad w = \frac{z + i|z|}{z - i|z|}, \quad z \mu \quad \mu, \mu \quad z \neq 0.$

1. $z = yi$ $y < 0$. 6

2. $\frac{u-1}{u+1} = z$ 6
 $\mu = 1,$ $u,$ μ $x'x.$ O(0,0)

3. $|z-1| = 2$ $u = -\frac{1}{2} - i\frac{\sqrt{3}}{2}.$ 7

4. $x^2 + x + \dots = 0,$ $\in \mathbb{R}^*,$ $\in \mathbb{R}$ (3) μ
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$f: \mathbb{R} \rightarrow \mathbb{R}$
 $xf(x) + \sqrt{x^2 + 1} = e^x, x \in \mathbb{R}$

1. N $g(x) = e^x$ $x_0 = 0$ 1.
3

2. $f(x) = \begin{cases} \frac{e^x - \sqrt{x^2 + 1}}{x}, & x \neq 0 \\ 1 & x = 0 \end{cases}$ 5

3. $\lim_{x \rightarrow -\infty} f(x) = 1$ 5

4. $y = 2x^2$ f
 μ $(0, 1).$ 7

5. $g(x) = \ln(2x^3 + \sqrt{x^2 + 1}) - x$
 $[0, +\infty).$ 5

1. $f : \mathbb{R} \rightarrow (0, +\infty)$ R
 $\lim_{x \rightarrow -\infty} f(x) = 0$ $f(\ln x) + \ln(f(x)) = 2x, x \in (0, +\infty)$
 $f(0) = 1$ 6
2. $(1, f(1))$ μ f μ 6
 μ μ $(0, f(0))'$ 8
3. $f(-x)f'(x) = 1, x \in \mathbb{R}$: $\mathbb{R},$ 6
i) f' $\mathbb{R}.$ 6
- ii) $x_1, x_2 \in (0, e)$
 $f'(x_1) + f'(x_2) = \frac{1 + 3f'(1) + 2f'(e)}{3}$ 5