

习题 1

1. (1) 相同; (2) 相同; (3) 不同

2. (1) $(-\infty, 0) \cup (0, 4]$; (2) 略

3. (1) $[2, +\infty)$; (2) $(-\infty, 1]$

4. (1) $y = u^{\frac{1}{4}}, u = 1 + x^2$; (2) $y = u^2, u = \sin v, v = 1 + 2x$;

(3) $y = w^{\frac{1}{2}}, w = 1 + v, v = 10^u, u = -x^5$; (4) $y = \frac{1}{u}, u = 1 + v, v = \arcsin w, w = 2x$.

5. $f(0) = 1, f(-x) = \frac{1+x}{1-x}, f\left(\frac{1}{x}\right) = \frac{x-1}{x+1}$

6. (1) 2; (2) $\frac{3}{2}$; (3) 0; (4) 0

7. (1) $\frac{1}{2}$; (2) e^2 ; (3) 0; (4) $\frac{\sqrt{2}}{2}$; (5) 3; (6) 1.

9. $F(x) = \frac{x^3 - x^2 - 1}{2x(x-1)}$.

10. 是同一个函数, 也是初等函数

11. $\lambda = -1, \mu = 0$.

12. $f(x) = \cot \pi x + \cot \frac{\pi}{x}$

13. $A = b + a$.

14. $a = -2, b = 0$

15. $x = -1$ 为可去间断点, $x = 0$ 为无穷间断点.

16. 令 $f(0) = 1$ 可使 $f(x)$ 在点 $x = 0$ 连续.

18. $a = 0, b = e$.

19. 2.

20. 3.

22. $c = 2a, k = 1$.

23. $\frac{3}{2}$

24. $-\frac{1}{6}$