

第13回 答 2

Ⅱ。 (1) $\frac{1}{16}$

(8) 1

(2) $-\frac{1}{243}$

(9) $5^{6+(-6)} 3^{-3} = \frac{1}{27} //$

(3) a^4

(10) $\sqrt[4]{2^8} = \sqrt[4]{(4)^4} = 4 //$

(4) a^8

(11) 6

(5) $a^{-8} b^{12}$

(12) 2

(6) a^{-3}

(13) 2

(7) a^6

Ⅱ。 (1) 6

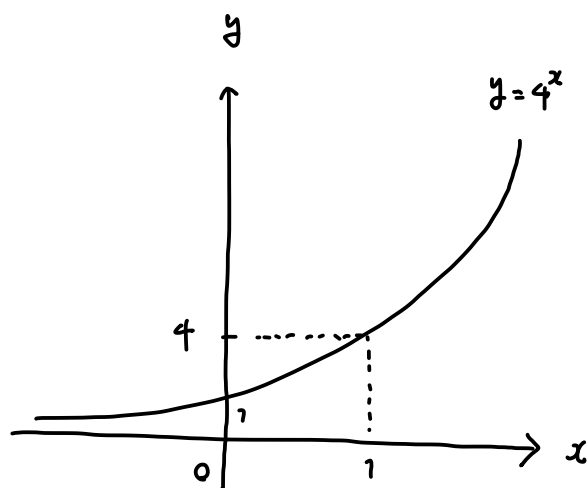
(3) 10

(2) 6

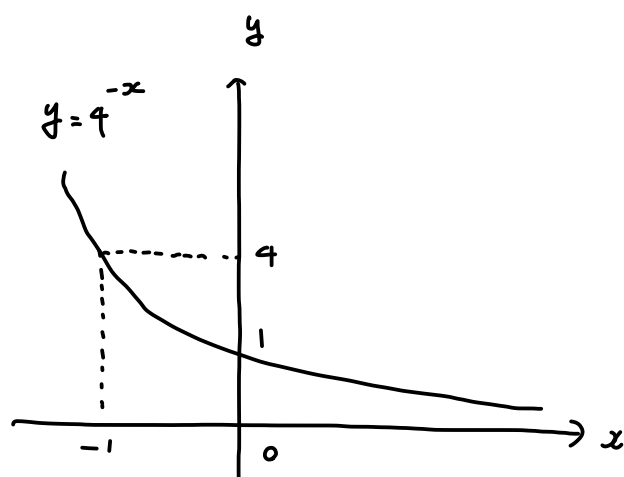
(4) 110

B.

(1)

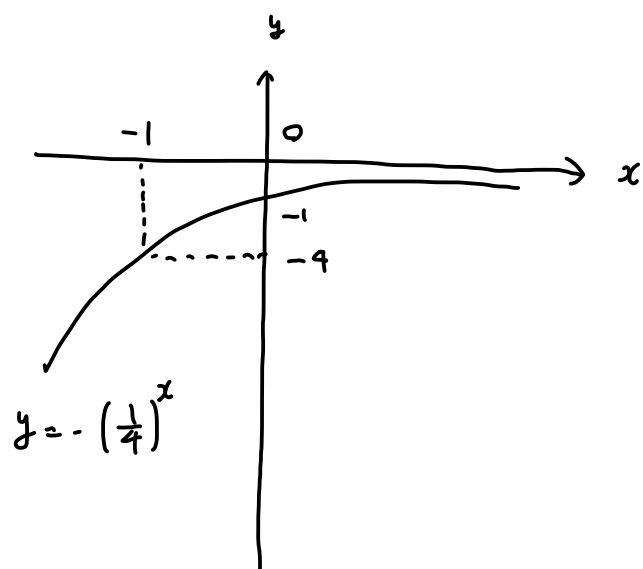


(2)



(1) 与 y 轴对称

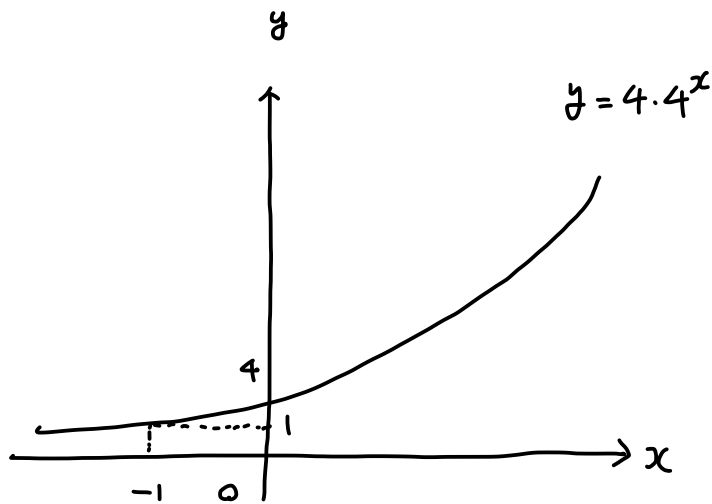
(3)



(1) 与 原点对称

B.

(4)



(1) を x 軸方向に

へした $\square$

(y 軸方向に 4 倍拡大
也可)

4.

$$-9 \leq y \leq -1$$

5.

$$(1) \quad 2^{-3} < 2^0 < 2^4 \quad \leftarrow 2^{-3} \leq 2^0 \leq 2^4 \text{ 也可。}$$

$$2^{-3} \leq 2^0 < 2^4 \text{ など也可。}$$

(つまり、 $<$ も $\leq$ に 入れかえ可。)

$$(2) \quad \left(\frac{1}{3}\right)^4 < \left(\frac{1}{3}\right)^0 < \left(\frac{1}{3}\right)^{-1} \quad \left\{ \begin{array}{l} \text{コレも同じ。} \\ \text{(以下も同じ)} \end{array} \right.$$

$$(3) \quad 4\sqrt[4]{8} = 2^{\frac{3}{4}}, \quad 6\sqrt[6]{32} = 2^{\frac{5}{6}}, \quad 9\sqrt[9]{128} = 2^{\frac{7}{9}},$$

$$\frac{3}{4} = \frac{27}{36}, \quad \frac{5}{6} = \frac{30}{36}, \quad \frac{7}{9} = \frac{28}{36} \quad \text{より、}$$

$$4\sqrt[4]{8} < 9\sqrt[9]{128} < 6\sqrt[6]{32} //$$

$$6. \quad (1) \quad x = 6 //$$

$$(2) \quad 2x+1 = 5$$

$$\therefore x = 2 //$$

$$(3) \quad -x \leq -2$$

$$\therefore x \geq 2 //$$

$$(4) \quad -2x \leq x+2$$

$$\therefore x \geq -\frac{2}{3} //$$

$$7. \quad (1) \quad \log_4 \frac{1}{2} = -\frac{1}{2}$$

$$(2) \quad 10^3 = 1000$$

$$8. \quad (1) \quad 1 \qquad (4) \quad -2$$

$$(2) \quad 2 \qquad (5) \quad \frac{5}{6}$$

$$(3) \quad 0 \qquad (6) \quad 2$$

9. (1) 2

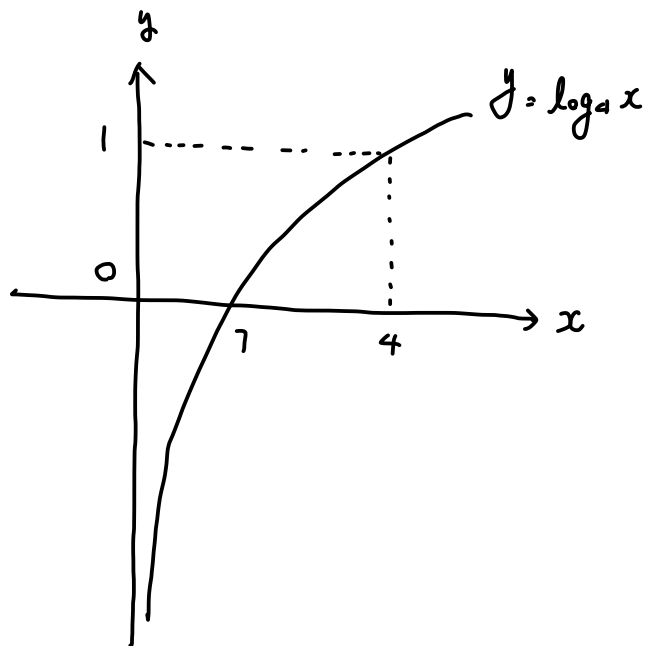
(2) $\frac{3}{2}$

$$\begin{aligned}
 (3) \quad & 2\log_2 \sqrt{2} - \frac{1}{2} \log_2 3 + \log_2 \frac{\sqrt{3}}{2} \\
 &= \log_2 2 - \log_2 3^{\frac{1}{2}} + \log_2 \sqrt{3} - \log_2 2 \\
 &= 0 \quad "
 \end{aligned}$$

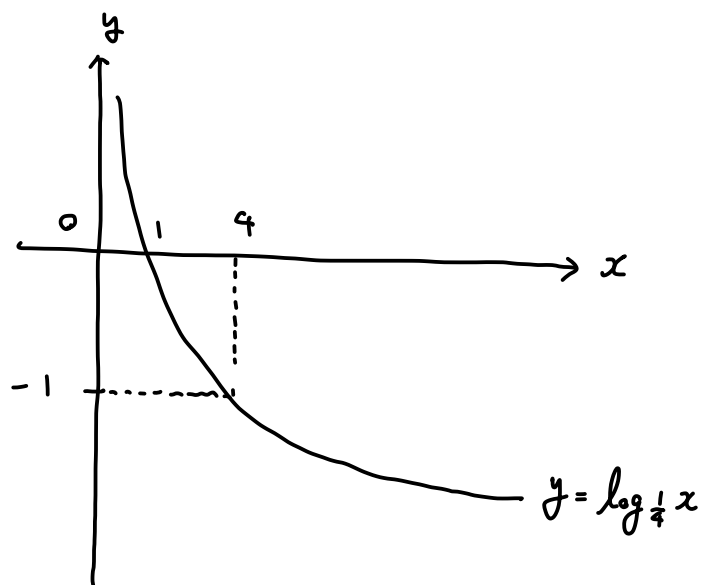
(4) $\frac{5}{2}$

(5) 3

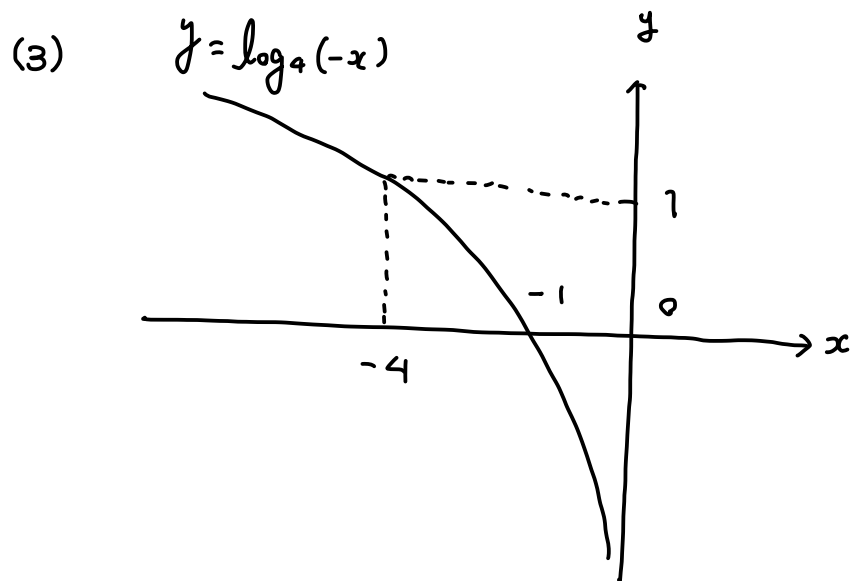
10. (1)



II①。(2)



(1) と x 軸対称。



(1) と y 軸対称。

$$\text{II} \circ \quad 0 \leq y \leq 4$$

$$\text{II} \circ \quad (1) \quad \log_2 3 < \log_2 5$$

$$(2) \quad \log_{0.3} 3 > \log_{0.3} 5$$

$$\text{II} \circ \quad (1) \quad x = 2^7$$

$$(2) \quad x = 6$$

$$(3) \quad 0 < x < 125$$

$$(4) \quad \log_{\frac{1}{3}} x \geq 2$$

$$- \log_3 x \geq 2$$

$$\log_3 x \leq \log_3 9^{-1}$$

$$\therefore 0 < x \leq \frac{1}{9} \quad //$$

14. (1) 5

(2) -6

15. (1) $\log_{10} 45600$

$$= \log_{10} 4.56 + \log_{10} 10^4$$

$$= 4.6590 \quad "$$

(2) $\log_{10} 0.000456$

$$= \log_{10} 4.56 + \log_{10} 10^{-4}$$

$$= -3.3410 \quad "$$

16. (1) $\log_{10} 38700$

$$= \log_{10} 3.87 + \log_{10} 10^4$$

$$= 0.5877 + 4$$

$$= 4.5877 \quad "$$

$$\text{II 6. (2) } \log_{10} 0.0458$$

$$= \log_{10} 4.58 + \log_{10} 10^{-2}$$

$$= 0.6609 - 2.0000$$

$$= -1.3391 \quad "$$

$$\text{II 7. (1) } \log_{10} 9.65 \approx 0.9845$$

より、

$$965 \quad "$$

$$(2) \log_{10} 7.63 \approx 0.8825$$

より、

$$-1.1175 = 0.8825 - 2.0000$$

$$= \log_{10} 7.63 + \log_{10} 10^{-2}$$

$$= \log_{10} 0.0763$$

$$\therefore 0.0763 \quad "$$

$$\text{Ex. (1) } \log_{10} 24$$

$$= \log_{10} 8 + \log_{10} 3$$

$$= 3 \times 0.3010 + 0.4771$$

$$= 1.3801 \quad ,$$

$$(2) \log_{10} 15$$

$$= \log_{10} 3 + \log_{10} 10 - \log_{10} 2$$

$$= 1.4771 - 0.3010$$

$$= 1.1761 \quad ,$$

$$(3) \log_4 9 = \frac{\log_{10} 9}{\log_{10} 4}$$

$$= \frac{\log_{10} 3}{\log_{10} 2}$$

$$\approx 1.5850 \quad ,$$

$$\text{I} \text{ 例。 (1) } p: 4, \quad 1: 5$$

$$h: 4, \quad 1: 5$$

$$(2) \quad a: 3, \quad b: 2$$

$$f: 3, \quad 7: 2$$

$$\text{例。 (1) } \log_{10} 6^{40}$$

$$= 40 \times (0.7781)$$

$$= 31.124$$

$$\therefore 32 \text{ 位 } //$$

$$(2) \quad \log_{10} \left(\frac{1}{2} \right)^{100}$$

$$= 100 \times (-0.3010)$$

$$= -30.10$$

$$\therefore \text{小数第31位 } //$$