

§3.2 p. 231-237 # 1, 5, 9, 13, 17, 21, 25, 27-30  
39-44, 45, 49, 53, 57, 61, 65, 79, 85

①  $4^3 = 64$

⑤  $32^{\frac{2}{5}} = 4$

⑨  $\log_5 125 = 3$

⑬  $\log_6 \frac{1}{36} = -2$

⑰  $f(x) = \log_2 x$ ;  $x = 16 \Rightarrow 2^y = 16 \Rightarrow y = 4$

⑳  $g(x) = \log_a x$ ;  $x = a^2 \Rightarrow g(a^2) = \log_a a^2 = 2$

㉓  $f(x) = \log x$ ;  $x = 12.5 \Rightarrow f(12.5) \approx 1.0969$

㉗  $\log_3 3^4 = 4$

㉘  $\log_{1.5} 1 = 0$

㉙  $\log_{\pi} \pi = 1$

㉚  $9 \log_9 15 = 15$

39 c - shift up 2

40 f - reflect over y-axis

41 d - reflect over y-axis, shift left 2

42 e - shift right 1

43 b - reflect over x-axis, shift right 1

44 a - reflect over y-axis & x-axis

$$y = ab^x$$

$$(45) \ln \frac{1}{2} = -0.693 \dots$$

$$\log_e \frac{1}{2} = -0.693 \dots \Rightarrow e^{-0.693 \dots} = \frac{1}{2}$$

$$(49) \ln 250 = 5.521 \dots \Rightarrow e^{5.521 \dots} = 250$$

$$(53) e^3 = 20.0855 \dots \Rightarrow \ln 20.0855 \dots = 3$$

$$(57) e^{-0.5} = 0.6065 \dots \Rightarrow \ln 0.6065 \dots = -0.5$$

$$(61) f(x) = \ln x ; x = 18.42 \Rightarrow f(18.42) \approx 2.913$$

$$(65) g(x) = \ln x \quad x = e^3 \Rightarrow \ln e^3 = 3$$

$$(79) \log_2(x+1) = \log_2 4$$

$$x+1 = 4$$

$$x = 3$$

$$(85) \ln(x^2 - 2) = \ln 23$$

$$x^2 - 2 = 23$$

$$x^2 = 25$$

$$x = \pm 5$$