

§ 3.1 p 226-227 # 6-10, 17, 19, 21, 25, 31, 45-51, 61, 67

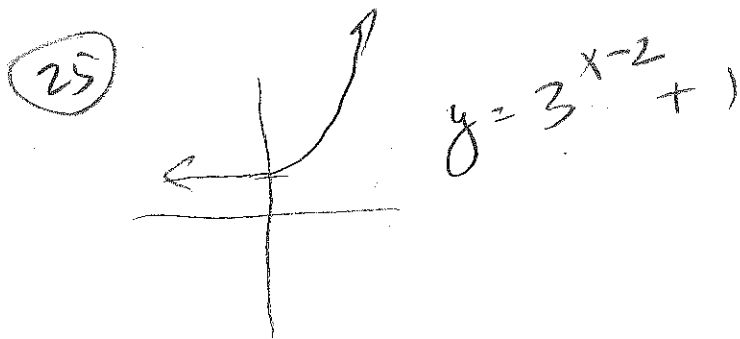
⑥ $f(x) = 200(1.2)^{12x}$
 $x = 24 \Rightarrow f(24) = 1.274 \times 10^{25}$

⑦ d ⑧ c ⑨ a ⑩ b

⑬ $f(x) = 3^x$, $g(x) = 3^{x-4} \Rightarrow$ shift right 4

⑰ $f(x) = -2^x$, $g(x) = 5 - 2^x \Rightarrow$ shift up 5

⑳ $f(x) = \left(\frac{2}{3}\right)^x$, $g(x) = -\left(\frac{2}{3}\right)^{-x+6} = \left(-\frac{2}{3}\right)^{-(x-6)} \Rightarrow$ reflect over x-axis
 reflect over y-axis
 shift right 6



㉓ $f(x) = 5000 e^{0.06x}$ $x = 6$
 $f(6) = 7166.647$

④⑤ $3^{x+1} = 27$
 $3^{x+1} = 3^3$
 $x+1 = 3$
 $x = 2$

④⑥ $2^{x-3} = 16$
 $2^{x-3} = 2^4$
 $x-3 = 4$
 $x = 7$

④⑧ $\left(\frac{1}{5}\right)^{x+1} = 125$
 $\left(\frac{1}{5}\right)^{x+1} = \left(\frac{1}{5}\right)^{-3}$
 $x+1 = -3$
 $x = -4$

$$(47) 2^{x-2} = \frac{1}{32}$$

$$2^{x-2} = 2^{-5}$$

$$x-2 = -5$$

$$\boxed{x = -3}$$

$$(49) e^{3x+2} = e^3$$

$$3x+2 = 3$$

$$3x = 1$$

$$\boxed{x = 1/3}$$

$$(51) e^{x^2-3} = e^{2x}$$

$$x^2-3 = 2x$$

$$x^2-2x-3 = 0$$

$$(x-3)(x+1) = 0$$

$$\boxed{x = -3, x = 1}$$

$$(50) e^{2x-1} = e^9$$

$$2x-1 = 9$$

$$2x = 10$$

$$\boxed{x = 5/2}$$

$$(61) A = Pe^{rt} = 25,000 e^{.0875(25)} \approx 222,822.57$$

$$(67) a) Q = 25\left(\frac{1}{2}\right)^0 = 25 \text{ gm}$$

$$b) Q = 25\left(\frac{1}{2}\right)^{\frac{10000/1599}{10000}} = 16.21 \text{ gm}$$

