

1 [2012 筑波大]

解答 (1) $y = -\frac{1}{4}x + \frac{1}{2}$ (2) $x_{n+1} = 2x_n + 2, x_n = 2^n - 2$

(3) $S_n = 2\left(1 - \frac{1}{2^n}\right)^2, \lim_{n \rightarrow \infty} S_n = 2$

2 [2001 関西大]

解答 (1) $a > 1, P(\sqrt{2\log a}, 1)$ (2) $a = \sqrt{e}$ のとき最小値 1

3 [2003 立命館大]

解答 (ア) $-px + p^2 + \log p$ (イ) $p + q + \frac{\log q - \log p}{q - p}$ (ウ) $2p + \frac{1}{p}$

(エ) $-p^2 - 1 + \log p$

4 [2008 信州大]

解答 (1) $-\frac{t^2}{4\sin^2 t} + \frac{\cos 2t + 1}{2}$ (2) $\frac{1}{4}$

5 [2014 鹿児島大]

解答 $y = x + 2 - \frac{\pi}{2}$

6 [2017 関西大]

解答 (ア) $\frac{4\sqrt{3}}{9}$ (イ) $\frac{2\sqrt{3}}{3}$

7 [2004 弘前大]

解答 $k = \frac{e^{-a^2}}{2a} \ (a > 0)$

8 [2006 工学院大]

解答 $k = \frac{3}{2}, y = -\sqrt{3}x + \frac{\sqrt{3}}{3}\pi + 1$