

2022 年度 一般選抜（2 月 11 日）

数学

◀工学部（社会環境工〈環境情報工コース〉・生命工）▶

1

解答

$$(1) 1 + \sqrt{6} \quad (2) x \leq 2 - \sqrt{3}, \quad 1 \leq x \leq 3, \quad 2 + \sqrt{3} \leq x \quad (3) 1.5$$

2

解答

$$(1) A\left(-2, \frac{3}{2}\right) \quad (2) t = 2\sqrt{5} \quad (3) x = 0, \quad -2, \quad \log_3 2$$

3

解答

$$(1) y = 2x\sqrt{1-x^2} \quad (2) \frac{dy}{dx} = \frac{2(1-2x^2)}{\sqrt{1-x^2}} \quad (3) \int_0^1 y dx = \frac{2}{3}$$

4

解答

$$\begin{aligned} (1) (a, b) &= (1, 18), (5, -2), (25, -6), (-1, -32), \\ &\quad (-5, -12), (-25, -8) \\ (2) (a, b) &= (13, -12), (5, 0), (13, 12), (-13, 12), \\ &\quad (-5, 0), (-13, -12) \\ (3) (a, b) &= (-45, 23), (7, -1), (75, -25), (49, -25), \\ &\quad (-3, -1), (-71, 23) \end{aligned}$$

5 解答

$$(1) S_n = 1 - \left(\frac{1}{2}\right)^n \quad (2) U_n = \frac{1}{3} - \frac{1}{3} \left(\frac{1}{4}\right)^n + 2n(n+1)$$

$$(3) T_n = \frac{2n+4-2^{n+2}}{2^n}$$