

$$\boxed{1} \quad (1) \quad a = \frac{3}{2}, b = -\frac{11}{2}$$

$$(2) \quad 18$$

$$(3) \quad x = \frac{\pi}{6}$$

$$(4) \quad \text{小さい順に } B, A, C$$

$$(5) \quad \sqrt{10}$$

$$(6) \quad \frac{34}{3}$$

$$\boxed{2} \quad (1) \quad p_1 = \frac{6}{11}, q_1 = \frac{5}{11}$$

$$(2) \quad p_{n+1} = \frac{6}{11}p_n + \frac{5}{11}q_n$$

$$(3) \quad p_n = \frac{1}{2} \left\{ 1 + \left(\frac{1}{11} \right)^n \right\}$$

$$\boxed{3} \quad (1) \quad y = -\frac{b}{a}x + b$$

$$(2) \quad V = -\frac{b}{a}x^3 + bx^2$$

$$(3) \quad V \text{ の最大値 : } \frac{4}{27}a^2b \quad P\left(\frac{2}{3}a, \frac{1}{3}b, 0\right)$$