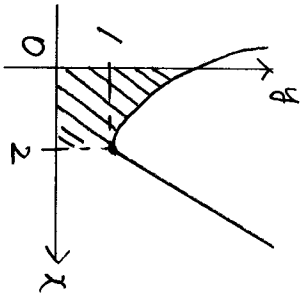
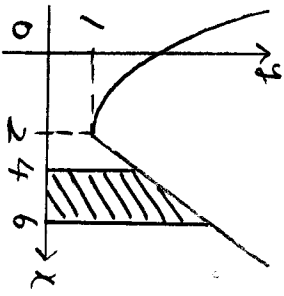


97

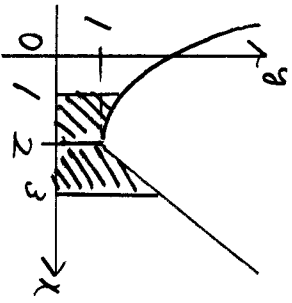
$$f(x) = \begin{cases} x^2 - 4x + 5 & (x \leq 2) \\ 2x - 3 & (x \geq 2) \end{cases} \Rightarrow (x-2)^2 + 1$$



$$(1) \quad S(0) = \int_0^2 f(x) dx =$$

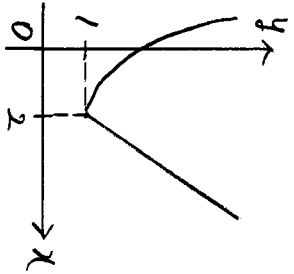


$$S(4) = \int_4^6 f(x) dx =$$



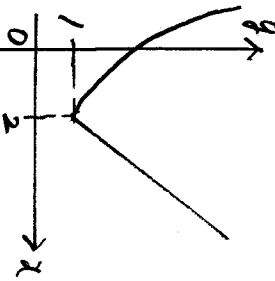
$$S(1) = \int_1^3 f(x) dx =$$

$$(2) \quad S(a) = \int_a^{a+2} f(x) dx$$



$$(i) \quad 0 < a < 2 \text{ or } 2 \leq a \quad S(a) =$$

$$(ii) \quad a \geq 2 \text{ or } 2 \leq a \quad S(a) =$$



解

$$\begin{aligned} (3) & \quad \frac{14}{3} \quad (1) \quad 14 \quad (2) \quad \frac{10}{3} \quad (3) \quad -\frac{1}{3}a^3 + 3a^2 - 4a + \frac{14}{3} \\ (4) & \quad 4a - 2 \quad (5) \quad \frac{9 - \sqrt{33}}{2} \end{aligned}$$