

31.3 1)

- α) $\int_3^2 f(x) dx = -\int_2^3 f(x) dx = -4$
- β) $\int_{-2}^2 f(x) dx = \int_{-2}^3 f(x) dx + \int_3^2 f(x) dx = 5 - 4 = 1$
- γ) $\int_2^{-2} f(x) dx = -\int_2^{-2} f(x) dx = -1$
- δ) $\int_{-2}^{10} f(x) dx = \int_{-2}^2 f(x) dx + \int_2^{10} f(x) dx = 1 + 8 = 9$

31.3 2)

- α) $\int_1^0 f(x) dx = -\int_0^1 f(x) dx = -4$
- β) $\int_{-1}^0 f(x) dx = \int_{-1}^1 f(x) dx + \int_1^0 f(x) dx = 6 - 4 = 2$
- γ) $\int_1^5 f(x) dx = \int_1^0 f(x) dx + \int_0^5 f(x) dx = -4 + 9 = 5$
- δ) $\int_{-1}^5 f(x) dx = \int_{-1}^0 f(x) dx + \int_0^5 f(x) dx = 2 + 9 = 11$

31.3 3)

- α) $\int_{-5}^3 f(x) dx = \int_{-5}^{11} f(x) dx + \int_{11}^3 f(x) dx = -4 - 8 = -12$
- β) $\int_9^{-5} f(x) dx = \int_9^3 f(x) dx + \int_3^{-5} f(x) dx = \int_9^3 f(x) dx - \int_{-5}^3 f(x) dx =$
 $\stackrel{\alpha) \text{ ερώτημα}}{=} 10 + 12 = 22$
- γ) $\int_{11}^4 f(x) dx = \int_{11}^3 f(x) dx + \int_3^9 f(x) dx + \int_9^4 f(x) dx =$
 $= \int_{11}^3 f(x) dx - \int_9^3 f(x) dx - \int_4^9 f(x) dx = -8 - 10 - 7 = -25$
- δ) $\int_{-5}^4 f(x) dx = \int_{-5}^{11} f(x) dx + \int_{11}^4 f(x) dx \stackrel{\gamma) \text{ ερώτημα}}{=} -4 - 25 = -29$