

$$(a) \int_0^{10} g(x) dx = \frac{1}{2} \cdot 20 \cdot 10 = 100 \quad [\text{area of a triangle}]$$

$$(b) \int_{10}^{30} g(x) dx = -\frac{1}{2}\pi(10)^2 = -50\pi \quad [\text{negative of the area of a semicircle}]$$

$$(c) \int_{30}^{35} g(x) dx = \frac{1}{2} \cdot 5 \cdot 5 = \frac{25}{2} \quad [\text{area of a triangle}]$$

$$\int_0^{35} g(x) dx = \int_0^{10} g(x) dx + \int_{10}^{30} g(x) dx + \int_{30}^{35} g(x) dx = 100 - 50\pi + \frac{25}{2} = 225/2 - 50\pi$$