

1.3. 11

$$\begin{aligned} 2) \int_0^2 f(x) dx &= \int_0^1 f(x) dx + \int_1^2 f(x) dx \\ &= 3 + 4 = 7 \end{aligned}$$

$$b) \int_0^1 3f(x) dx = 3 \int_0^1 f(x) dx = 3 \cdot 3 = 9$$

$$c) \int_0^3 8f(x) dx = 8 \int_0^3 f(x) dx$$

$$= 8 \cdot \left(\int_0^1 f(x) dx + \int_1^2 f(x) dx + \int_2^3 f(x) dx \right)$$

$$= 8 \cdot (3 + 4 + (-8)) = -8$$

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$$d) \int_3^1 2f(x) dx = 2 \int_3^1 f(x) dx$$

$$= -2 \int_1^3 f(x) dx$$

$$= -2 \left(\int_1^2 f(x) dx + \int_2^3 f(x) dx \right)$$

$$= -2 (4 + (-8))$$

$$= -2 (-4) = 8$$