

[12 pts.] The functions f and g are continuous, f is even, g is odd, $\int_0^1 f(x) dx = 5$ and $\int_0^1 g(x) dx = 7$. In each part below compute the integral or, if you do not have enough information to do so, write "not enough information." Show your work.

$$(a) \int_0^1 (f(x) - g(x)) dx = \int_0^1 f(x) dx - \int_0^1 g(x) dx = 5 - 7 = -2$$

Final answer to (a):

-2

$$(b) \int_0^1 3g(x) dx = 3 \int_0^1 g(x) dx = 3 \cdot 7 = 21$$

Final answer to (b):

21

$$(c) \int_0^1 f(x)g(x) dx.$$

Final answer to (c):

not enough
information

$$(d) \int_{-1}^1 (f(x) + g(x)) dx = \int_{-1}^1 f(x) dx + \int_{-1}^1 g(x) dx$$
$$= 2 \int_0^1 f(x) dx + 0 = 2 \cdot 5 = 10$$

Final answer to (d):

10