

Nr. 1

a) $\int_3^1 f(x) dx = \left[\frac{1}{2} x^2 + 1 \right]_3^1 = \left[\frac{1}{2} x^2 + 1 \right]_3^1$

$= \frac{1}{2} \cdot 1^2 + 1 = \frac{5}{2}$
 $= \frac{1}{2} \cdot 3^2 + 1 = \frac{11}{2}$

$= \frac{5}{2} - \frac{11}{2} = -\frac{6}{2} = -3$

b) $\int_1^2 g(x) dx = -x^2 - 2x + 4 = \left[-\frac{1}{2} x^3 - x^2 + 4x \right]_1^2$

$= -\frac{1}{2} \cdot 2^3 - 2^2 + 4 \cdot 2 = -4 - 4 + 8 = 0$
 $= -\frac{1}{2} \cdot 1^3 - 1^2 + 4 \cdot 1 = -\frac{1}{2} - 1 + 4 = \frac{5}{2}$

$= 0 - \frac{5}{2} = -\frac{5}{2}$

c) $\int_2^{-2} h(x) dx = -x^4 + 3x^2 + 4 = \left[-\frac{1}{5} x^5 + x^3 + 4x \right]_2^{-2}$

$= -\frac{1}{5} \cdot (-2)^5 + (-2)^3 + 4 \cdot (-2) = \frac{32}{5} - 8 - 8 = \frac{32}{5} - 16 = \frac{32 - 80}{5} = -\frac{48}{5}$
 $= -\frac{1}{5} \cdot 2^5 + 2^3 + 4 \cdot 2 = -\frac{32}{5} + 8 + 8 = -\frac{32}{5} + 16 = \frac{-32 + 80}{5} = \frac{48}{5}$