Aufgaben 5.3

(5)

$\int_1^2 f(x)\,dx = -4$, $\int_1^5 f(x)\,dx = 6$, $\int_1^5 g(x)\,dx = 8$

a) 0

b) -8

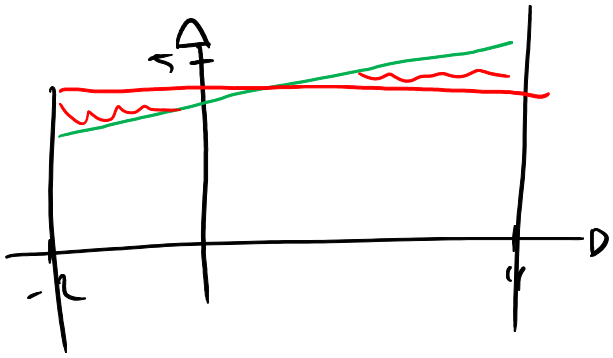
c)

d) $\int_2^5 f(x)\,dx$ um das zu berechnen muss man $\int_1^1 f(x)$ subtrahieren

$6 - (-4) = 10$

(7)

$$\int_{-2}^{4} \left(\frac{x}{2}+3\right) dx = \left|\frac{x^2}{4}+3x\right|_{-2}^{4} = \left(\frac{4^2}{4}+3\cdot 4\right) - \left(\frac{(-2)^2}{4}+3\cdot(-2)\right) = \underline{\underline{21}}$$



$$F = 6\cdot 2 + \frac{6\cdot 3}{2} = 12+9 = 21$$

oder

$$3.5\cdot 6 = 21$$

(9)

$$\int_{-2}^{1} |x|\,dx = \left|\frac{x^2}{2} - \left(-\frac{x^2}{2}\right)\right|_{-2}^{1} = \left(\frac{1}{2}+\frac{1}{2}\right) - \left(\frac{(-2)^2}{2}+\frac{+1^2}{2}\right) = 5$$