4.a

$$h = \frac{20-5}{5} = 3 \qquad t = 10 \cdot \int_5^{20} v^{-3/2} \, dv \qquad f(x) = v^{-3/2}$$

$$RF(h) = h \cdot \left(f(6.5) + f(9.5) + f(12.5) + f(15.5) + f(18.5) \right)$$

$$= 0.4382 \quad // \cdot 10$$

$$= \underline{0.4382 \cdot 10^1}$$

korr. Resultat: $-2v^{-0.5} \Big|_5^{20} \cdot 10 = 0.4472 \cdot 10^1$

abs. Fehler: $\underline{0.8982 \cdot 10^{-1}}$

4.b

$$x_i = a + ih$$

$$t = 10 \int_5^{20} v^{-3/2} \, dv$$

$$h = \frac{b-a}{n} = \frac{20-5}{5} = 3$$

$$Tf(3) = 3 \cdot \left(\frac{5^{-3/2} + 20^{-3/2}}{2} + 8^{-3/2} + 11^{-3/2} + 14^{-3/2} + 17^{-3/2} \right)$$

$$= 0.4658 \qquad // \cdot 10$$

$$= \underline{0.4658 \cdot 10^1}$$

korrekter Wert: $-2 v^{0.5} \Big|_5^{20} \cdot 10 = 0.4472 \cdot 10^1$

Differenz = abs. Fehler = $\underline{0.1860}$