Nr. 6.) a) $f(x) = \frac{1}{x^2-1} = u(v(x)) \Rightarrow u(x) = \frac{1}{x}$; $v(x) = x^2 - 1$

b) $u(v(x)) = \frac{1}{x^2} - 1$; $u(x) = \frac{1}{x} - 1$; $v(x) = x^2$

c) $u(v(x)) = (\sin(x))^2$; $u(x) = x^2$; $v(x) = \sin(x)$

d) $u(v(x)) = \sin(x^2)$; $u(x) = \sin(x)$; $v(x) = x^2$

e) $u(v(x)) = \sqrt{x+3}$; $u(x) = \sqrt{x}$; $v(x) = x+3$

f) $u(v(x)) = \sqrt{3x}$; $u(x) = \sqrt{x}$; $v(x) = 3x$

g) $u(v(x)) = 2^{x-3}$; $u(x) = 2^x$; $v(x) = x-3$

h) $u(v(x)) = 2^x - 3$; $u(x) = x-3$; $v(x) = 2^x$

Nr. 9) $r(t) = 1{,}5 \cdot t$; $A_0 = r^2 \cdot \pi$; t in Sekunden, r in cm, A(t) in cm^2

$A(t) = (1{,}5 \cdot t)^2 \cdot \pi$

Nr. 10.) a) $s(4) = 50 + \frac{30}{4^2+2} = 55 \Rightarrow r(55) = 0{,}04 \cdot 55 + 1{,}8 = 4$

$s(0) = 50 + \frac{30}{0+2} = 65 \Rightarrow r(65) = 0{,}04 \cdot 65 + 1{,}8 = 4{,}4$

$r(s(0)) - r(s(4)) = 4{,}4 - 4 = \underline{0{,}4\,Lb}$ hat die Rückschlagkraft nachgelassen

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b) $r(s(t)) = 0{,}04 \cdot (50 + \frac{30}{t+2}) + 1{,}8 = 2 + \frac{1{,}2}{t+2} + 1{,}8$

$r(t) = r(s(t)) = \underline{3{,}8 + \frac{1{,}2}{t+2}}$