18. $m_1v_1 + m_2v_2 = m_1w_1 + m_2w_2$, $w_1 = w_2$, $w = 0{,}14\ m \cdot s^{-1}$

19. $W = E_p$, $W_1 = 4905$ J, $W_2 = 274$ J, $W_2 - W_1 = 4631$ J

20. $W = E_{k2} - E_{k1} = 1760$ J

21. $E_k = E_p$, $v = 6{,}3\ m \cdot s^{-1}$

22. $W = E_k = 67.5$ J