

HW.2

2-70: (a) 6.68×10^{-19} [kgm/s], (b) 2.51×10^{-10} [J], (c) 1.00×10^{-10} [J]

2-75: (a) 2.19×10^{-26} [kgm/s], (b) 3.64×10^{-22} [kgm/s],
(c) In the first case, 3×10^{-7} % low, and, in the second case, 40% low.

2.76: (a)
(b) Given $u = 0.6c$: $u' = 0$, Given $u = -0.8c$: $u' = -0.946c$
Given $u = -0.6c$: $u' = -0.882c$, Given $u = 0.8c$: $u' = 0.385c$
(c) Before $p(\text{total}) = -26.25c$, after $p(\text{total}) = -26.25c$

2.87: (a) $0.759c$, (b) $2.07c$, (c) $0.948c$

2.92: (a) $1.78m_1$, (b) $3.89m_1$, (c) $-1.11 m_1c^2$

2.97: Covered this problem during the class

2.99: 4.8×10^{-5} [s]

2.104: See lecture note = Solution is there.

2.111: $p = 4m_0c$, $E = 5m_0c^2$, (b) $u'_x = 0.5c$, $p' = \sqrt{3}m_0c$, $E' = 2\sqrt{3}m_0c^2$