2-22. A block has a horizontal component of velocity relative to a pickup truck of $v_{B/P} \sim N(5, 0.5^2)$ m/s. The masses of the block and the pickup truck are $m_B = 1000$ kg and $m_P = 2500$ kg, respectively. Just before the block was loaded to the truck, the truck has a velocity of $v_P \sim N(2, 0.2^2)$ m/s, determine the velocity just after the block was loaded.

Solution: $v \sim N(3.43, 0.25^2)$ m/s.