10. [10 points] When not selling cards, Rowena runs a rather popular ice cream shop in town. Her store carries only two flavors, mango and strawberry, which she sells for $M(k)$ and $S(k)$ dollars, respectively, for k kilograms. Assume that both functions are invertible, but **do not** assume anything else about them. Your answers for this problem may involve M, S, or their inverses.

a. [2 points] Give a practical interpretation of $S^{-1}(4.7)$.

b. [3 points] Give a practical interpretation of $M^{-1}(S(1.5)) = 1$.

c. [2 points] Write an equation that expresses the following: "7 kg of strawberry ice cream costs 4 dollars less than 5 kg of mango ice cream."

d. [3 points] A customer bought T total kg of ice cream at Rowena's shop. If they spent \$20 on strawberry ice cream, find an expression for the amount, in dollars, they spent on mango ice cream. Your answer may involve T.

