5. [12 points] A coffee shop owner buys coffee from company A or company B. Let $A(c)$ and $B(c)$ be the cost (in dollars) of buying c pounds of coffee from company A and company B respectively. The formulas for the cost functions are given below

$$A(c) = 15 + 8.25c \qquad \text{and} \qquad B(c) = 22 + 7.85c.$$

a. [3 points] What is the practical interpretation of the slope of $A(c)$?

In the following questions, you must find all your answers **_algebraically_**. Show all your work. Your answers must be accurate up to the first two decimals.

b. [2 points] How many pounds of coffee do you need to buy in order for the cost of the coffee to be the same if you buy it either from company A or company B?

Answer: _____

c. [2 points] If the coffee shop owner wants to buy 1000 dollars worth of coffee from company A, how many pounds of coffee can he afford?

Answer: _____

d. [5 points] Suppose that the coffee shop owner wants to buy 500 dollars worth of coffee, but he wants to buy 50 percent more coffee from company A than from company B. How many pounds of coffee does he need to buy from company B?

He buys _____pounds of coffee from company B