4. [10 points] During the summer, Percy drives 12 miles to his uncle's farm every day. He has two scooters he can drive, scooter A and scooter B.

- Scooter A gets 35 miles per gallon in off-highway driving, and 50 miles per gallon on the highway.
- Scooter B gets 25 miles per gallon off-highway, and 55 miles per gallon on the highway.
- Two miles of the drive are off-highway, but the other 10 miles can be split any way he chooses between off-highway and highway driving.

a. [3 points] Write a function $A(h)$ that gives the number of gallons of gas Percy uses driving one way to the farm on scooter A if he drives h miles on the highway.

$A(h) =$ $\frac{h}{50} + \frac{12-h}{35}$

b. [3 points] Write a function $B(h)$ that gives the number of gallons of gas Percy uses driving one way to the farm on scooter B if he drives h miles on the highway.

$B(h) =$ $\frac{h}{55} + \frac{12-h}{25}$

c. [4 points] Which scooter should Percy drive to the farm to use the smallest amount of gas? What distance should he drive on the highway and off the highway to achieve this? How much gas does he use in one trip in which he's using the smallest amount of gas? Give your answers in **exact** form.

Percy should drive scooter A.

He should drive 10 miles on the highway
and 2 miles off-highway.

He uses $\frac{9}{35}$ gallons of gas on this trip.