SHUBHAM GUPTA.
180749.

HW-13

let the states be the successive pickup zones.

we have $P_{A,A} = 0.6$ $P_{B,A}$ 0.3

$\therefore \pi_A = 0.6\,\pi_A + 0.3\pi_B = 0.6\,\pi_A + 0.3(1-\pi_A)$

solving it we get

$\boxed{\pi_A = 3/7}$ $\boxed{\pi_B = 4/7}$

let X be the profit of the trip.

$$E[X] = \frac{3}{7} E[X|A] + \frac{4}{7} E[X|B]$$

$$= \frac{3}{7}[0.6\times 6 + 0.4\times 12] + \frac{4}{7}[0.3(12) + 0.7(8)]$$

$\boxed{E(X) = 8.85}$ (A)