Multivar Exam #2 Saaif Ahmed PG 1

Honor Pledge:
    "I have neither given nor received any illegal aid on this exam"
        -Saaif Ahmed 11/4/20

7.

Two weeks ago, Mary bought 1 pound of apples, 1 pound of pears, and 1 pound of oranges, and paid $6. Last week, she bought 2 pounds of apples, 1 pound of pears, and 2 pounds of oranges, and paid $9. This week, she bought 1 pound of apples, 1 pound of pears, and 3 pounds of oranges, and paid $8. Assuming that fruit prices have not changed during the last three weeks, compute how much each of the three types of fruit that Mary bought costs per pound.

$1a + 1p + 1o = 6$
$2a + 1p + 2o = 9$
$1a + 1p + 3o = 8$

$$\begin{bmatrix} 1 & 1 & 1 & 6 \\ 2 & 1 & 2 & 9 \\ 1 & 1 & 3 & 8 \end{bmatrix}$$

$2A - B$
$$\begin{bmatrix} 1 & 1 & 1 & 6 \\ 0 & 1 & 0 & 3 \\ 1 & 1 & 3 & 8 \end{bmatrix}$$

$p = 3$

$1a + 3 + 1o = 6$
$1a + 3 + 3o = 8$
$a + o = 3$
$a + 3o = 5$
$3 - o + 3o = 5$
$o = 1$
$a = 2$

Answer: $apple = 2, orange = 1, pear = 3$