Question: Bill walks \$\frac{1}{2}\$ mile south, then \$\frac{3}{4}\$ mile east, and finally \$\frac{1}{2}\$ mile south. How many miles is he, in a direct line, from his starting point? Express your answer as a decimal to the nearest hundredth.

```
# Step 1: Calculate the total distance walked south |
                                                         NL CoT as Python Comment
total south = 1/2 + 1/2
# Step 2: Calculate the total distance walked east
total east = 3/4
# Step 3: Use the Pythagorean theorem to find the direct distance from the starting point
import math
direct_distance = math.sqrt(total_south**2 + total_east**2)
# Step 4: Round the direct distance to the nearest hundredth
direct distance rounded = round(direct distance, 2
From the result, we can see that the direct distance from the starting point is \boxed{1.25} miles
```

Python code execution for step 1:

Step 1: Calculate the total distance walked south total_south = 1/2 +1/2

Python code execution for step 2:

Step 1: Calculate the total distance walked south total south = 1/2 +1/2

Step 2: Calculate the total distance walked east total east = 3/4