

### Answer on Question #73468 - Physics / Other

You were  $S_1 = 60$  m to the west of your home at  $t_1 = 10\text{AM}$ , and then you walked to a shop 150 meters to the east of your home at 10:15AM. After that you walked 30 meters more in the west direction in 5 minutes. Find your final position, total displacement, average speed and average velocity.

**Solution:**



Final position is at points C (120 m to the east of your home)

Total displacement  $AC = 120 + 60 = 180$  m.

Total distance  $AB + BC = 150 + 60 + 30 = 240$  m.

$$\text{Average speed} = \frac{\text{total distance}}{\text{total time}} = \frac{240}{15 + 5} = \frac{240}{20} = 12 \frac{\text{m}}{\text{min}}$$

$$\text{Average velocity} = \frac{\text{total displacement}}{\text{total time}} = \frac{180}{15 + 5} = \frac{180}{20} = 9 \frac{\text{m}}{\text{min}}$$

to the east of your home

**Answers:**

Final position 120 m to the east of your home

Total displacement 180 m

$$\text{Average speed} = 12 \frac{\text{m}}{\text{min}}$$

$$\text{Average velocity} = 9 \frac{\text{m}}{\text{min}} \text{ to the east of your home.}$$