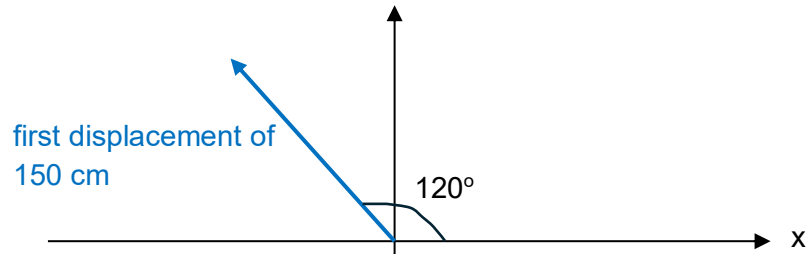


2

A man pushing a mop across a floor causes it to undergo two displacements. The first displacement, as shown in the figure below, has a magnitude of 150 cm and makes an angle of  $120^\circ$  measured anticlockwise with respect to the positive x-axis.



The resultant displacement has a magnitude of 140 cm and is directed at an angle of  $30^\circ$  measured anticlockwise with respect to the positive x-axis.

What are the magnitude and direction of the second displacement?

magnitude / cm

angle(measured anticlockwise) to the positive x-axis

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**A**

290

$90^\circ$

**B**

290  
270°

**C**  
205  
17°

**D**  
205  
343°