

ReTest - Physics 12 - Chapter 1 and 3.4 Test - Oct 2013

Name: LEY Block: \_\_\_\_\_

*Answer all questions in the space provided.*

*Part A MUST be completed using graphical methods (use a ruler and protractor, and scale diagrams).*

*You are not permitted to have access to your calculator while you are working on Part A.*

*After you complete Part A submit it to your teacher.*

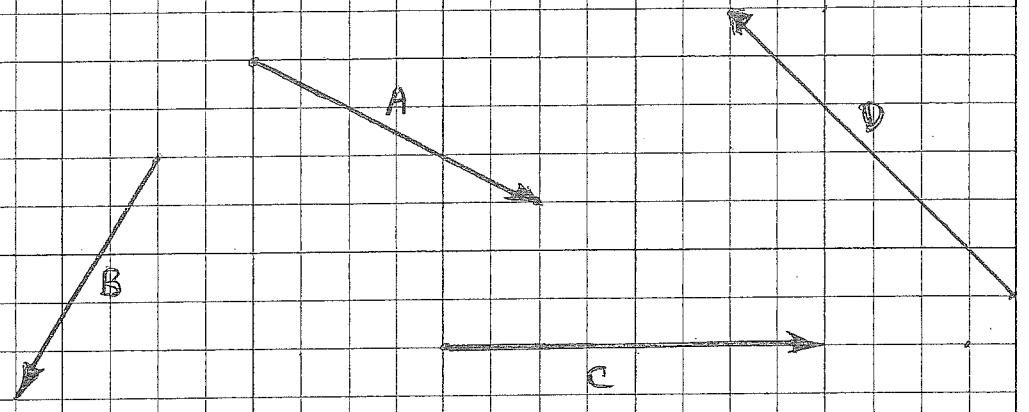
*You will then be given Part B of the test. After you are given Part B, you may have access to your calculator.*

*Part B MUST be completed using analytical methods (component method)*

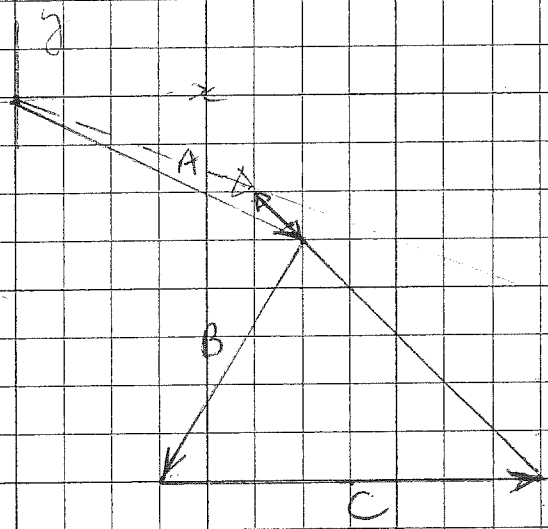
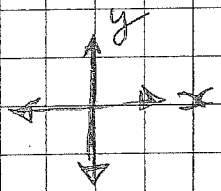
**PART A: GRAPHICAL METHODS**

Name: \_\_\_\_\_  
Block: \_\_\_\_\_

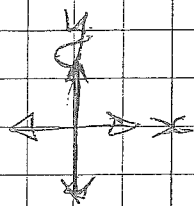
1.



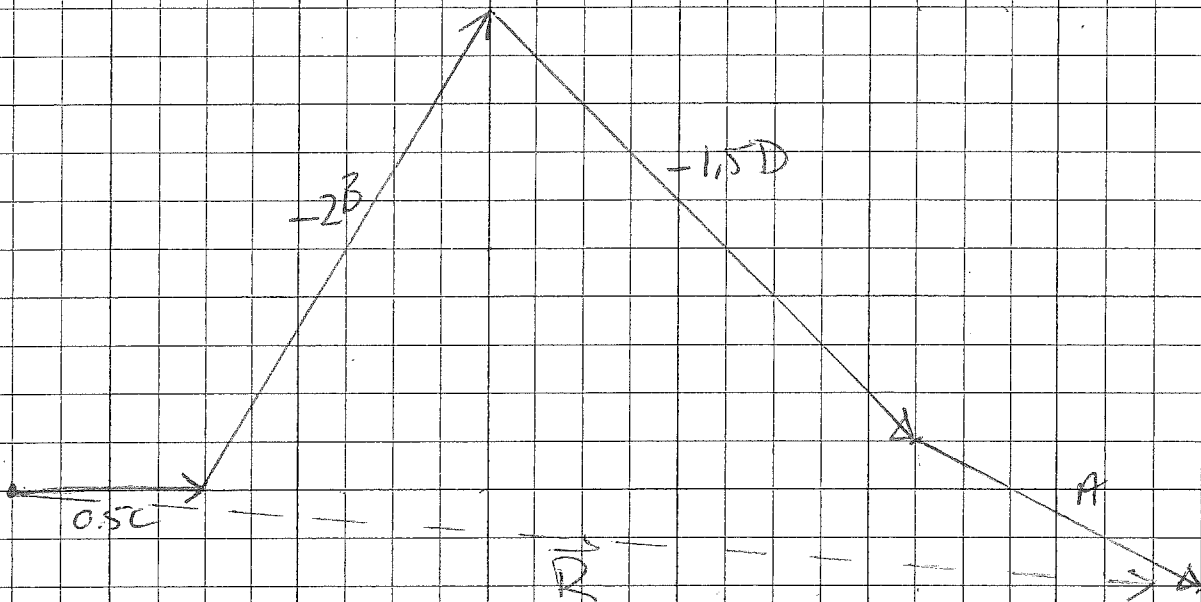
(a)  $\vec{A} + \vec{B} + \vec{C} + \vec{D} =$  5.3 units 19° below the +x axis



(b)  $0.5\vec{C} - 2\vec{B} - 1.5\vec{D} + \vec{A}$



= 25.2 units  $\angle$  5° below the x-axis



2. Use Graphical methods to solve this question. Use a ruler and protractor to draw a scale diagram. Do not do any calculations.

On a beautifully sunny Sunday afternoon, a group of friends decides to go on a bicycle ride.

- First they ride 4.0 km [25.0° East of South]
- Then they ride 8.0 km [40.0° North of West]
- Then they ride 10.0 km [13.0° West of South]

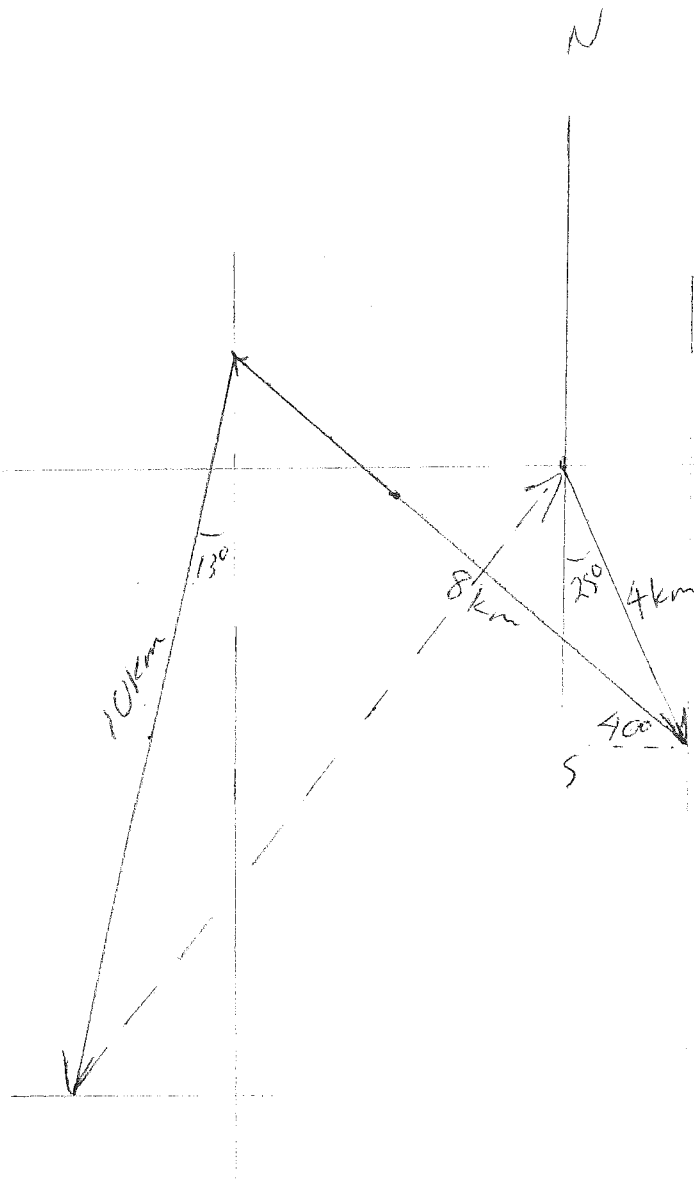
What is their displacement on the last part of the trip when they return to their start position?

Scale: 1 cm : 1 km

Answer:

10.6 km [52° N of E]

Diagram:



3. Use Graphical methods to solve this question. Use a ruler and protractor to draw a scale diagram. Do not do any calculations.

A motorboat is travelling in a river. In still water the boat can travel at 12.0m/s. The river current pushes the boat at a rate of 7.0m/s [20.0° West of South], and the wind is pushing the boat at 4.5m/s [due East]. If the captain heads the boat 35° East of North, what is the resultant velocity of the boat?

Scale: 1cm : 1m/s

Answer: 9.6m/s [18° N of E]

Diagram:

