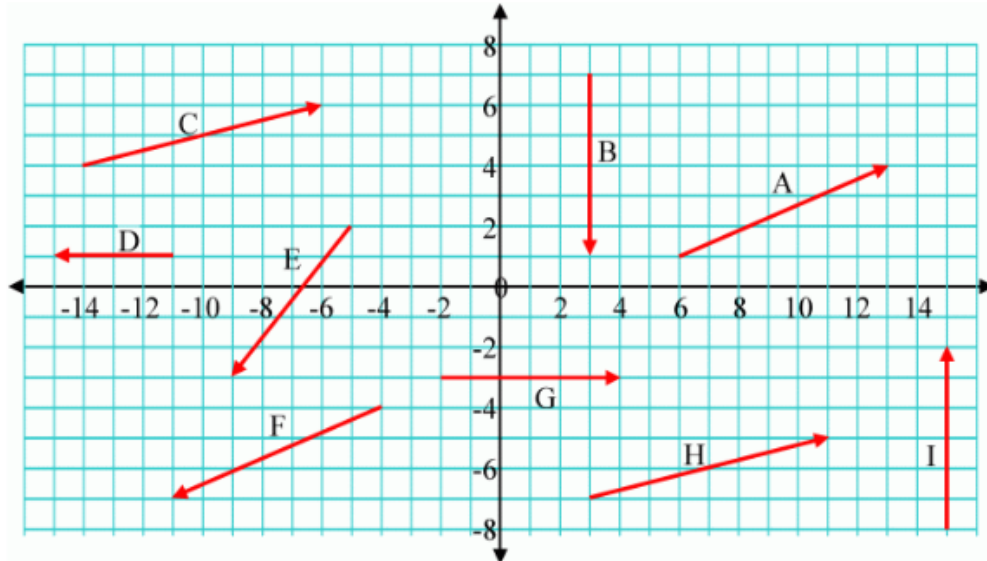




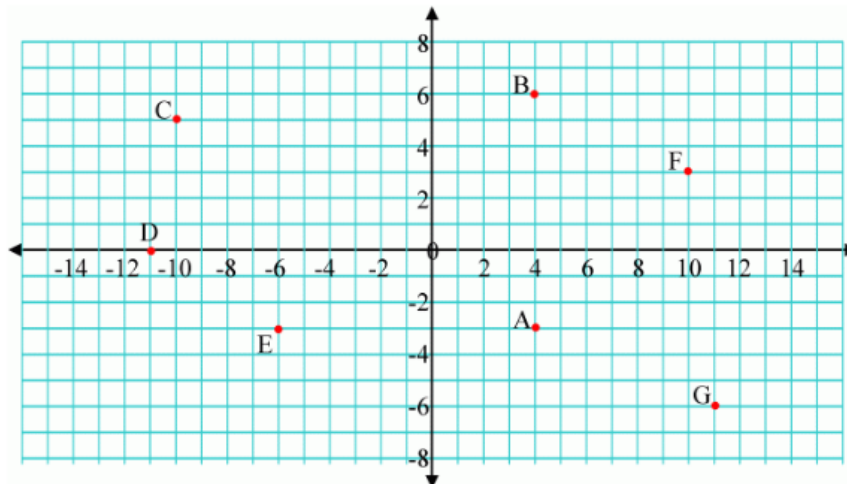
UNITED NATIONS SCHOOL
PHYSICS WORKSHOP
FIRST PERIOD
TENTH GRADE
TEACHER: JAIRO ORJUELA SEGURA

The workshop must be solved in the notebook and delivered in the first physics class in April.

1. The following diagram shows a variety of displacement vectors. Express each vector in component X and Y, and find the angle use trigonometric ratios.



2. In a movement an object goes from point A to B, then from B to C, and finally from C to D. Find the resulting vector and obtain its components and angle.



3. A particle begins its journey at the point (-3.1) , and with an angle of 35 degrees it moves 3.38 cm. Then with an angle of 298 degrees it moves 3.8 cm, and then at an angle of 65 degrees it advances 6.7 cm. Find the resultant and obtain its components and angle.

4. A boat starts at the point $(2, -1)$ and moves according to the following instructions:
- It moves 4.5 units at an angle of 60 degrees from the positive x-axis.
 - Next, it moves 3 units at an angle of 240 degrees from the positive x-axis.
 - Finally, it advances 5 units at an angle of 120 degrees from the positive x-axis.

Find the resultant displacement of the boat and determine its components (x and y) and the angle it makes with the positive x-axis.

5. A plane begins its journey at the point $(5, 3)$ and moves according to the following instructions:
- It moves 7 units at an angle of 45 degrees from the positive x-axis.
 - Next, it moves 8 units at an angle of 315 degrees from the positive x-axis.

Finally, it advances 6.5 units at an angle of 150 degrees from the positive x-axis. Find the resultant displacement of the plane and determine its components (x and y) and the angle it makes with the positive x-axis.

