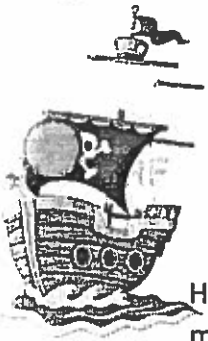


VECTOR ISLAND



Vectors are used in science to describe anything that has both a direction and a magnitude. They are usually drawn as pointed arrows, the length of which represents the vector's magnitude.

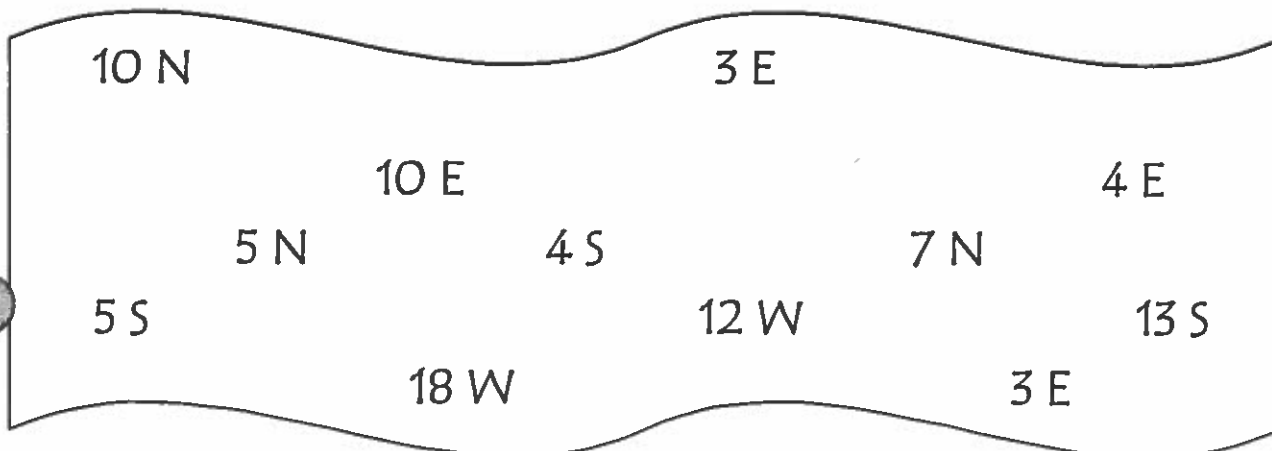
Introduction: Not long ago, a pirate named Petey sailed the seas around Baldwinsville. He was an evil scoundrel, stealing treasures from around town. One stormy night, Pirate Petey made a treasure map that could only be followed by vector experts. He put his map in a bottle and placed it on a shelf deep within his pirate ship. Later that evening, a terrible storm blew in and Pirate Petey and his crew were lost at sea, along with the treasure map.

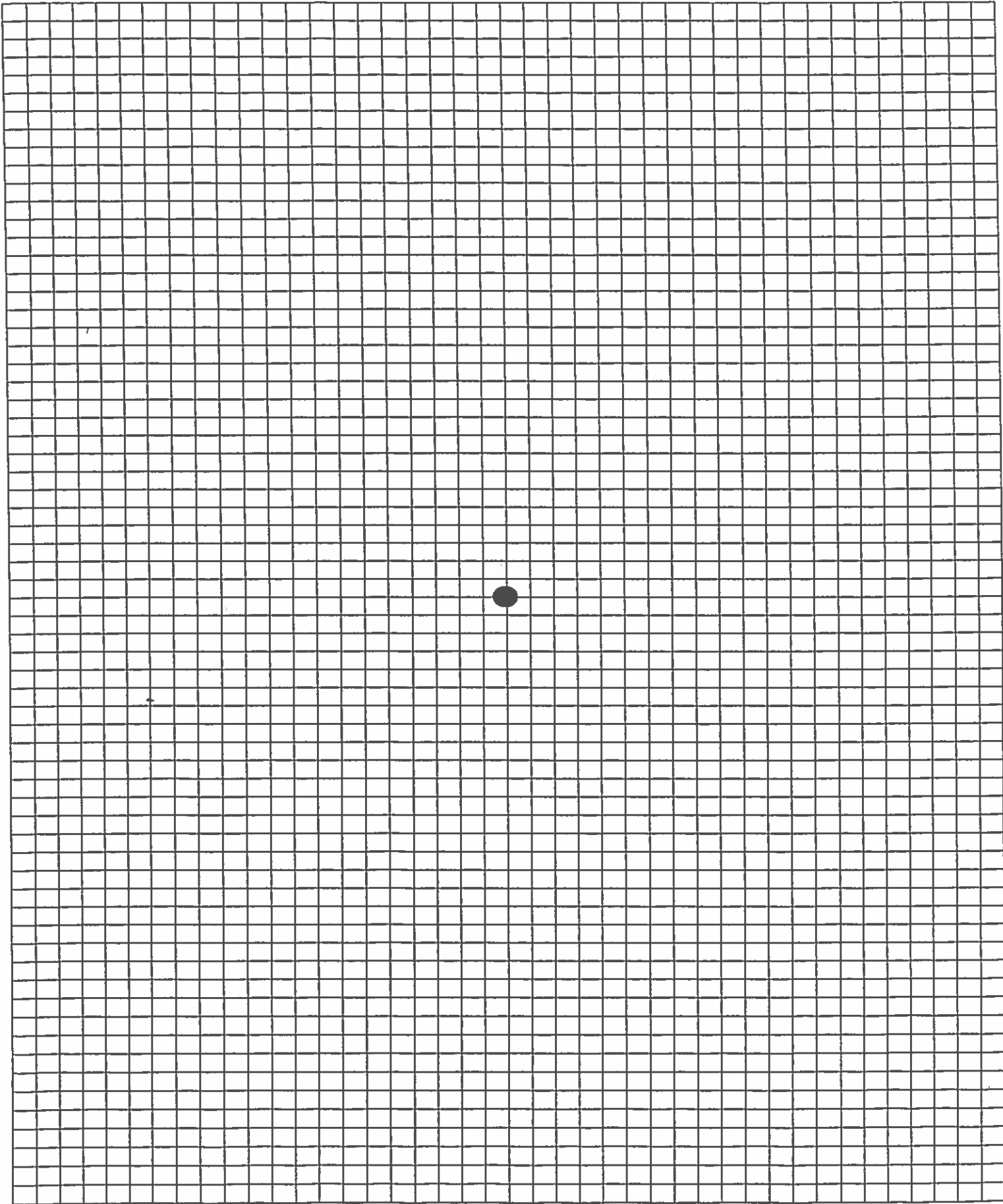
During the last low tide around Vector Island, a group of students discovered a bottle with some bits of paper inside. On each bit of paper was an instruction. These could be the steps to finding Petey's buried treasure! It is up to you to piece the clues together to find the treasure.



Directions:

1. Choose a colored pencil to plot your journey.
2. Place your pencil on the starting point in the middle of the graph paper.
3. Randomly choose a direction from the pieces of the treasure map below, and follow the direction on the graph paper by drawing a corresponding line. Cross off the direction you marked on the graph.
4. Randomly choose another direction from among the pieces. Draw a line corresponding to it, beginning from the point where your last line ended. Remember to cross off the directions that you used.
5. Continue to do this with each direction, remembering to cross them off as you go.
If at any time a direction leads you off the paper, choose a different one, and come back to it later.
6. When you have drawn all the vectors, place an X where your path ends. This is one possible location for the treasure!
7. Next, choose a different colored pencil. Repeat the whole process with a new color to find another possible location for the treasure.
8. Finally, answer the questions that follow using your knowledge of forces and vectors.

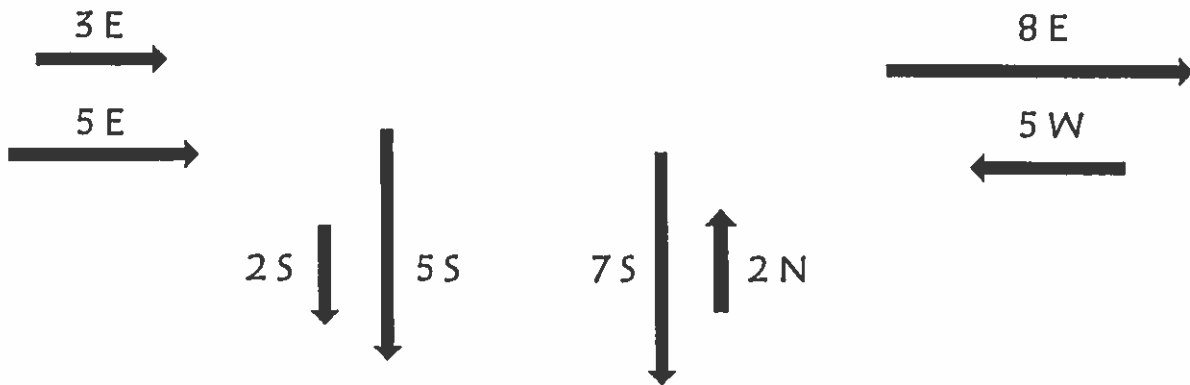




Answer the following questions using complete sentences:

1. When drawing a vector to represent force, what does the length of the arrow represent?

2. What would be the resultant (net) force for the following:



3. Are the forces drawn in question 2 balanced or unbalanced forces? How do you know?

4. In the space below, draw one set of balanced forces and one set of unbalanced forces.

Balanced Forces

An empty rectangular box for drawing a set of balanced forces.

Unbalanced Forces

An empty rectangular box for drawing a set of unbalanced forces.