

## Vector Maps - Graphic and Component Methods

Name \_\_\_\_\_

### Vector Lab – The Vacation Trip

**Step 1.** Locate and label 6 rides or attractions on the map (including the gate).

**Step 2.** Enjoy a day at the park, starting at the gate, and going in straight lines from one point to the next until it is time to go home. Use arrows to show the direction of travel (a small arrow head at the end of the line).

**Step 3.** Using a protractor and a ruler, find out the direction and magnitude for each of these arrows. The directions should always be compared to the paper so that  $0^\circ$  will be to the right,  $90^\circ$  will be up,  $180^\circ$  will be to the left and  $270^\circ$  will be down.

**Step 4.** Name those vectors and place their measurements below.



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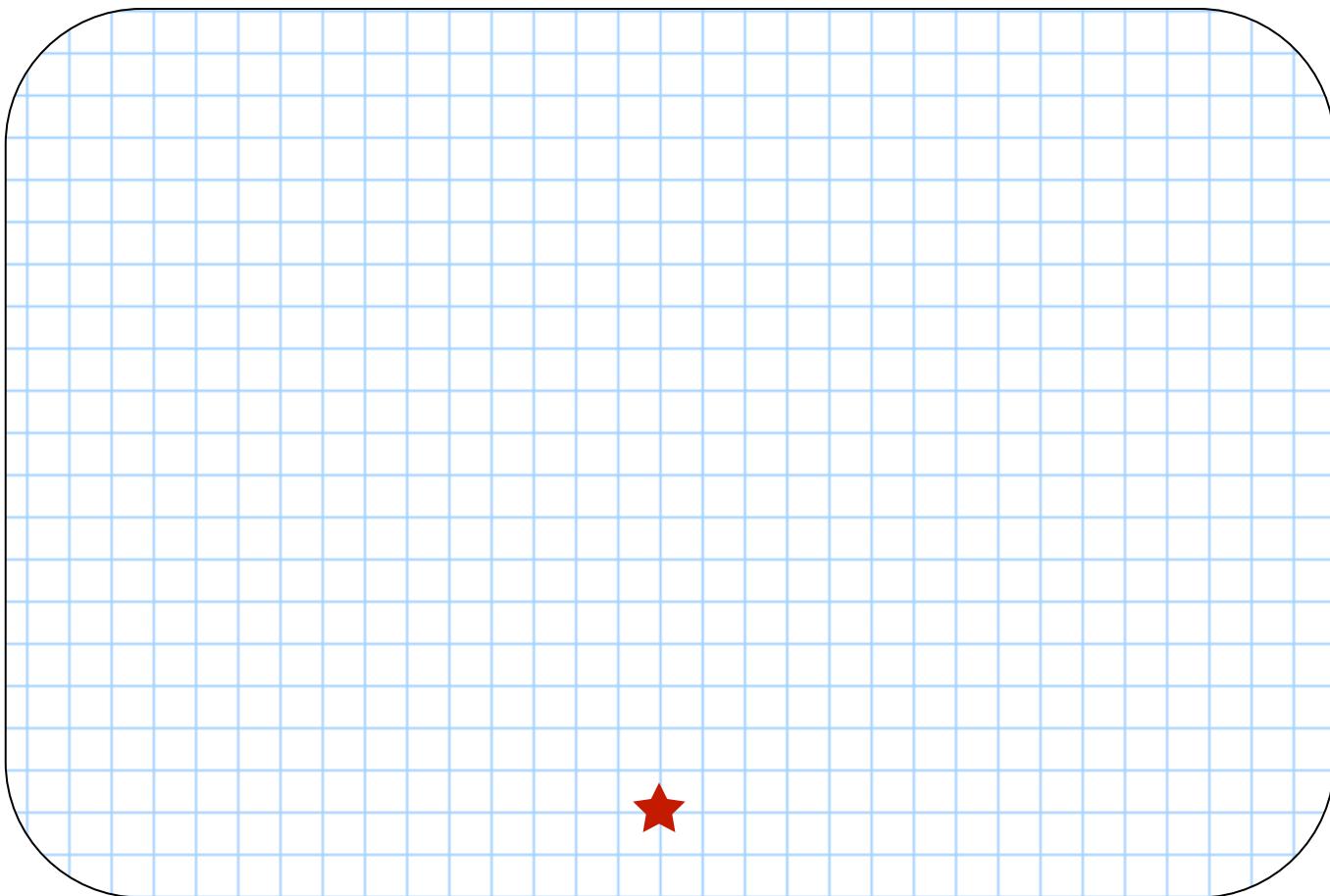
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**Step 5.** Using the information from the lines above, draw a head to tail addition of the vectors below. Use a scale so that 1 cm on the map = 0.5 cm on the page. Find, using the ruler and protractor, the resultant and the equilibrant.

**R =**

**E =**



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**Step 6.** Find the horizontal and vertical components of each of the 6 vectors. Watch negatives, you will have positive and negative values in each column.

**X components**

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**Y components**

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**Step 7.** Find the total x and total y of the resultant.

$$R_x = \underline{\hspace{2cm}}$$

$$R_y = \underline{\hspace{2cm}}$$

**Step 8.** Calculate the resultant and the equilibrant vectors.

$$R = \underline{\hspace{2cm}}$$

$$E = \underline{\hspace{2cm}}$$

**Step 9. Conclusion**

Compare and contrast the two methods of vector addition . Be sure to mention the simplicity and accuracy of each method.

