PHYSICS IN MOTION
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Unit 1F
Mathematical Resolution of Vectors
Note-Taking Guide and Questions to Consider

Name:

Date:

Main Ideas, Key Points, Questions:

After watching the video segment, write down key points, main ideas, and big questions.

Objective(s):

- *Add one-dimensional vectors mathematically, recognizing that signs indicate direction.*
- *Add two-dimensional vectors mathematically using the Pythagorean theorem.*

Notes:

During the video segment, use words, phrases, or drawings to take notes.

Summary:

After watching the video segment, write at least three sentences explaining what you learned. You may ask yourself: "If I was going to explain this to someone else, what would I say?"

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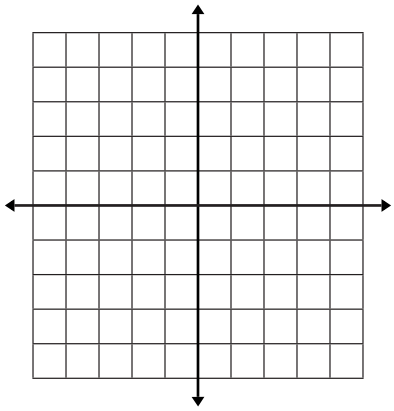
Answer the following.

1. **On the diagram below, label the x-axis, y-axis, and origin.**



2. **What are the four cardinal directions?**

3. **A car drives 150 m to the east then backtracks 30 m to the west. Describe the mathematical operation you will use to determine the net movement of the car.**

4. **Using vector arrows and the tip-to-tail method, draw a diagram of a person walking 5 m to the west then 2 m to the east. What is the net movement of the person from start to finish?**

5. **What is the sum of two or more vectors called?**

6. **If two vectors are in opposite directions, how would you show this in a component table?**

questions continued on next page

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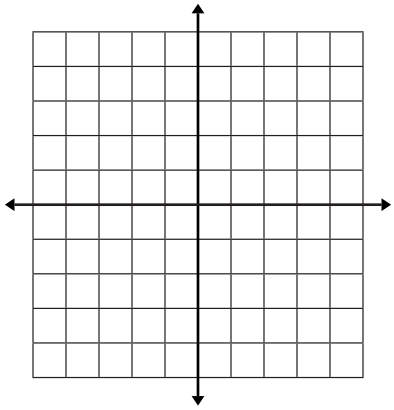
Answer the following.

7. On the diagram below, label quadrants I-IV.



8. A resultant vector has x- and y-components that are negative. In what quadrant would this resultant vector lie?

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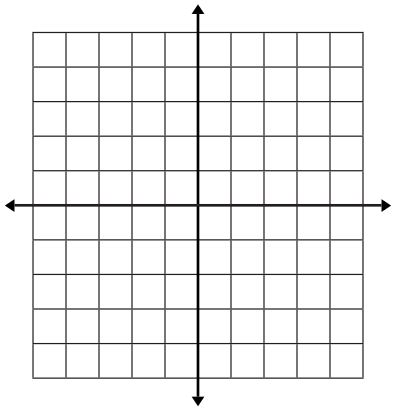
9. A cyclist rides his bike 9 km to the north and 12 km to the west.

a. Draw a diagram showing the net movement of the cyclist.



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Answer the following.

b. In what quadrant does the cyclist finish his trip?

c. What is the magnitude of the net movement of his trip?

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