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.

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?”
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?
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?

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.
Answer the following.

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

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

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