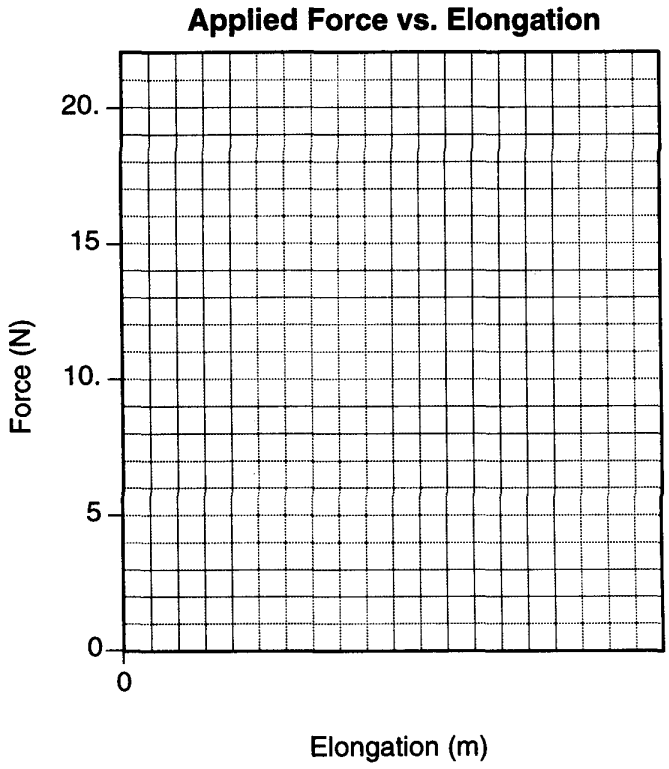
Name **Part 2 Review T**

Base your answers to questions **1** through **4** on the information in the data table below. The data were obtained by varying the force applied to a spring and measuring the corresponding elongation of the spring.

Applied Force (N)	Elongation of Spring (m)
0.0	0.00
4.0	0.16
8.0	0.27
12.0	0.42
16.0	0.54
20.0	0.71



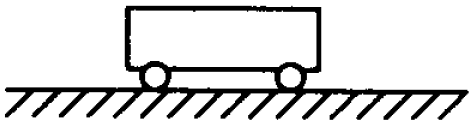
1. Using the best-fit line, determine the spring constant of the spring. [Show all calculations, including the equation and substitution with units.]

2. Draw the best-fit line.

3. Plot the data points for force versus elongation.

4. Mark an appropriate scale on the axis labeled "Elongation (m)."

5. A student pulls a cart across a horizontal floor by exerting a force of 50. newtons at an angle of 35° to the horizontal.

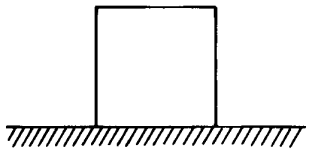


a On the diagram above, using a protractor and a straightedge, construct a scaled vector showing the 50.-newton force acting on the cart at the appropriate angle. The force must be drawn to a scale of 1.0 centimeter = 10. N. Label the 50.-newton force and the 35° angle on your diagram. Be sure your final answer appears with the correct labels (*numbers and units*).

b Construct the horizontal component of the force vector to scale on your diagram, and label it *H*.

c What is the magnitude of the horizontal component of the force?

6. An aluminum block weighing 20. Newtons, sliding from left to right in a straight line on a horizontal steel surface, is acted on by a 2.4-newton friction force. The block will be brought to rest by the friction force in a distance of 10. meters.



a On the diagram of the block, draw an arrow to identify the direction of *each* force acting on the block while it is still moving, but is being slowed by the friction force. Identify *each* force by appropriately labeling the arrow that represents its line of direction.

b Determine the magnitude of the acceleration of the block as it is brought to rest by the friction force. [Show all work.]