NAME _____   DATE _____

Scenario

Three identical springs (A, B, and C), each with an unstretched length of 1.0 m and spring constant of 2.0 N/m are attached on the edge of a circular hoop with radius of 4.0 m, as shown in Figure 1. (The hoop is lying flat on a desk, and we are looking at it from above.) A small object is attached to each spring and comes to rest in the center of the hoop.
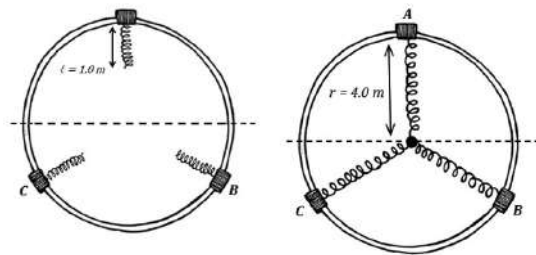

Figure 1

Quantitative Analysis

PART A: How much work was done on the spring-object system while attaching the springs to the center object?

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Argumentation

In Figure 2, the mass has been given a horizontal displacement of 3.0 m relative to the center of the hoop by an external force. A student measures the resulting lengths of each spring, as shown on the diagram.

PART B: Did the external force do positive work, negative work, or no work on the spring-mass system?

_____ Positive work   _____ Negative work   _____ No work

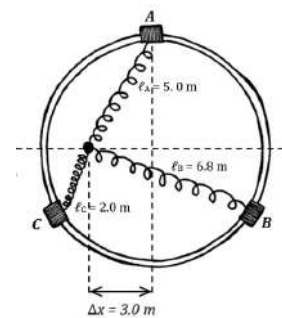In a clear, coherent, paragraph-length response, explain your choice above.

Figure 2

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