Unit 7 - Week 5

Assignment 5
Due on 2018-08-25, 23:59:59

Use the information in the table below to answer the following questions:

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1. If the equation of motion for a block on a frictionless surface is given by $\ddot{x} = -kx$, where $x$ is the displacement from the equilibrium position, what is the natural frequency of the system?

2. Determine the natural frequency of the system for the given equation.

3. If a simple harmonic oscillator is driven at a frequency equal to its natural frequency, what is the frequency of the driving force?

4. What is the purpose of a transfer station?

5. Which of the following vehicles is generally used as a transfer vehicle for solid waste?

6. Which of the following methods is used to calculate the feasibility of the transfer station?

7. Determine the number of 30-lb containers required per year for customer collection after compacting, for a facility with 20,000 customers. The generation rate is 6.0 lb per person. The compacted container weight is 600 lb.

8. Which of the following waste is not compostable?

9. If the weight of a compacted container is 300 lb, and the distance traveled is 20 miles, what is the average fuel consumption?

10. If the number of customers is 20,000 and the generation rate is 6.0 lb per person, what is the total amount of solid waste generated per year?

11. If the transfer station is designed to handle 5,000 containers per day, how many containers can be handled per hour?

12. If the transfer station is designed to handle 5,000 containers per day, how many containers can be handled per hour?