Coaster Creator: Pre-lab

Name:	Period:

Forms of Energy : Highlight all of the energy forms you observe throughout this lab.

Gravitational	Elastic	Chemical	Nuclear	Magnetic	Electrostatic	Mechanical	Thermal	Electrical	Sound	Electromagnetic
										

1. Look at the equation for potential energy below:

$$PE = \square \times g \times \square$$

(Mass) (Height)

A. As the mass increases, would you expect the potential energy (PE) to increase or decrease? Explain your answer.

B. As the height increases, would you expect the potential energy to increase or decrease? Explain your answer.

C. Look at the three equations below. Notice that the mass and gravity stay the same in each equation, and the only difference is the height.

Circle the equation that will have the greatest potential energy. Use the space below to explain why you made your selection.

$$PE = 300Kg \times g \times 62.0m$$

(Mass) (Height)

$$PE = 300Kg \times g \times 16.6m$$

(Mass) (Height)

$$PE = 300Kg \times g \times 34.2m$$

(Mass) (Height)

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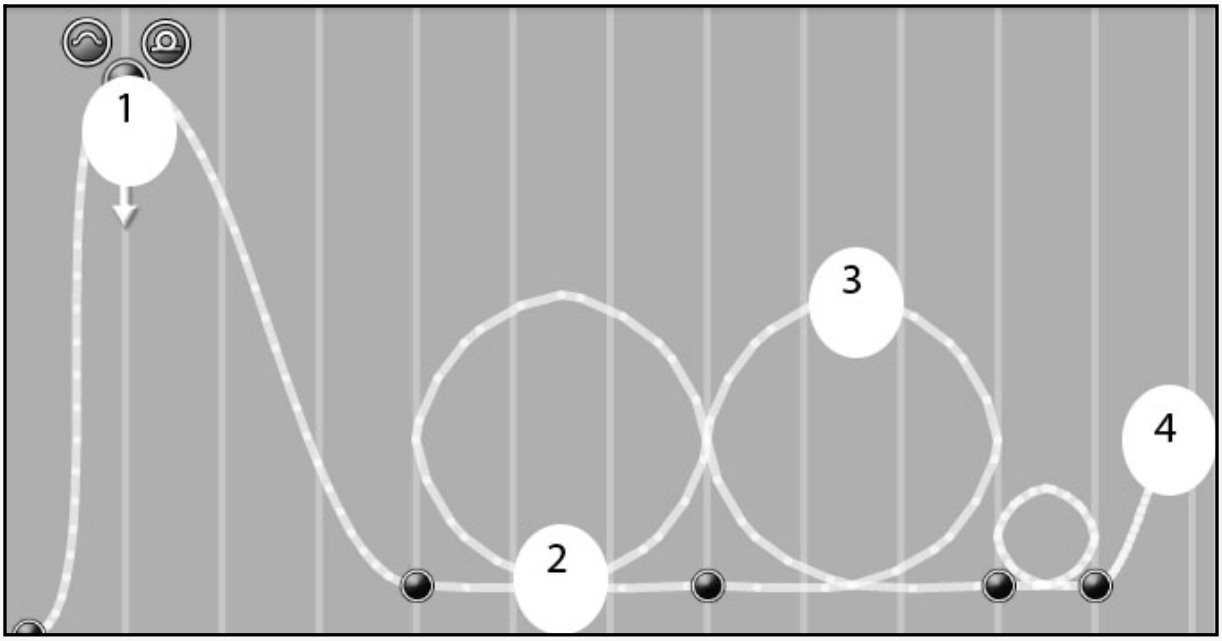
D. Look at the roller coaster track below. At which point (1, 2,3, or 4) do you think *potential energy* would be the greatest? (*Hint:* Think about how height affects potential energy.) Explain your answer.



2. Use the space below to define: Friction

3. Use the space below to define: Thermal Energy (see page 9 in your book)

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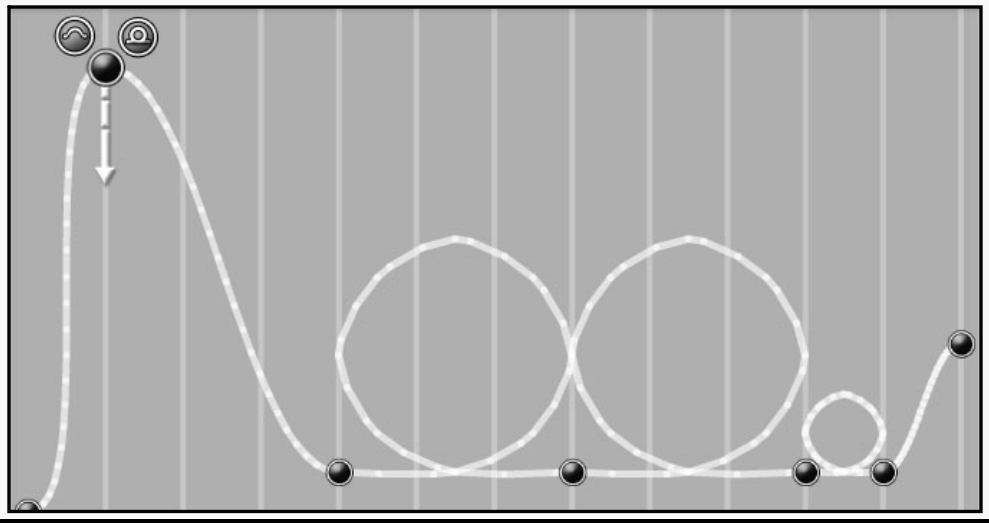
4. Use the space below to define: Conservation of Energy (see page 9 in your *Operation: Infinite Potential* book)

5. Sometimes when people are cold they rub their hands together to create friction. Keeping this is mind, briefly explain the relationship between *friction* and *thermal energy*.

A. Using the track below, circle the place where you think your car will have built up the most friction. Explain why you chose your answer:



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