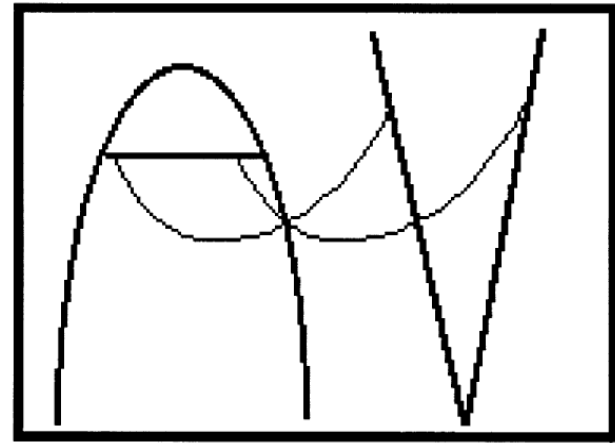


## SKY COASTER

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1. Measure the half-period ( $T/2$ ) of motion for the first half-cycle, second half-cycle, etc., until the ride comes to a stop. Does the period change as the amplitude of the motion decreases?
2. Provide an explanation for the change in half-period  $T/2$  measured in (1).
3. If there were no air resistance, would the period  $T$  be longer or shorter? Can you support your answer by observing the ride with different numbers of riders?
4. From the period  $T$  for the smallest oscillations estimate the height of the ride. (Remember that  $T = 2\pi(L/g)^{1/2}$  where  $L$  is the length of the pendulum and  $g = 9.8 \text{ m/s}^2$  is the acceleration due to gravity.)
5. Would the ride take longer on the surface of the moon? Why or why not?