

## Pre-lab 9

A Hot Wheels car is moving at 2.7 m/s at the bottom of a  $30^\circ$  incline. A student predicts that the car will travel a maximum distance of 92 cm along the incline. Is this a reasonable prediction? Explain fully.

Make a graph on a separate sheet of paper of distance along the incline vs. speed at the bottom of the incline for cars starting up a fixed incline at various speeds? Explain in detail how you arrived at your graph.

Ignoring friction, how would the angle of the incline affect how high above the base of the incline the car will ultimately travel? In other words, suppose a Hot Wheels car approaches two inclines, one at  $20^\circ$  and one at  $40^\circ$ . How will the maximum height above the base compare for the two inclines? Explain your reasoning fully.