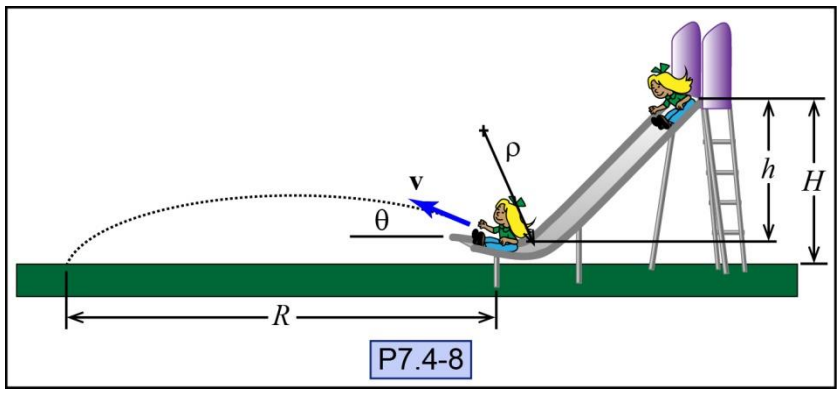
P7.4-8) A little girl is sliding down a slide as shown. She starts from rest at the top of the slide. She descends a total of $h = 18$ ft before she flies off the end of the slide. The end of the slide is curved causing her to leave the end of the slide at an angle of $\theta = 15^o$ relative to the horizontal. Determine the horizontal distance she travels in the air if the height from where she started to the ground is $H = 20$ ft. Neglect friction and air resistance.



P7.4-8

Given:

Find:

Solution:

Work-Energy Balance

Label your states on the figure.

Is this a conservative or non-conservative system?

When applying the work-energy balance equation, what two states should you go between in order to solve for the speed of the girl as she exits the slide?

Write down the work-energy balance equation in variable form.

WE.Eq: _____

Kinematics

Use kinematics to calculate the horizontal distance traveled by the girl.

$R = 23.7$ ft