Where did it go?

Rotation inquiry lab,

A ball rolling down a ramp never quite has as much kinetic energy at the bottom of the ramp as potential energy at the top of the ramp… so where does the energy go?

Well, some is “lost” to friction. But most goes to rotational kinetic energy!

Ramp 55cm high, 99 cm off the ground, lands 1.2 m downrange. Ball 2.5cm diameter, m=100g

Purpose:

1 Find vslide

2 find vreal

3 PE at the top of ramp=

4 KE= at the bottom of the ramp

5 KE rotation must be=

6. Omega? Rotational speed

7 how many rotations does it make in 1 sec?

8 rpm=

9 KE rot.= ½ I omega squared

10 circumference

11 rotations down ramp

12 rotational acceleration

13 torque

14 angular momentum