

Since friction does (negative) work on the Hot Wheels car:

$$mgh + W_f = \frac{1}{2}mv^2$$

Solving for v:

$$v = \sqrt{2(gh + W_f / m)}$$

The flight time does not change:

$$t_f = \sqrt{2H / g}$$

So the horizontal range is:

$$R = 2\sqrt{hH + (W_f H / mg)}$$

For the two ramps:

$$R_1^2 = 4hH + 4\frac{W_{f1}H}{mg} \quad ; \quad R_2^2 = 4hH + 4\frac{W_{f2}H}{mg}$$

Subtracting and solving of the difference in frictional work:

$$W_{f1} - W_{f2} = mg\frac{R_1^2 - R_2^2}{4H}$$

The difference in work comes from the flat section of the track so:

$$W_{f1} - W_{f2} = \mu_k mgL$$

Substituting this and solving for the frictional coefficient:

$$\mu_k = \frac{R_1^2 - R_2^2}{4HL}$$