Barbie Zip Line

**Objective**: Create a zip line business so Barbie (and others) will have a safe and thrilling experience without getting stuck or dying.

You have a budget of $2500.

| Item | Cost |
| --- | --- |
| Permit (buy from principal) | $500 |
| Pulley system | $50 |
| Harness (carabiner) | $50 |
| Steel cable | $30 per foot |

**Create:**

1. A ride that would be instant (certain) death for Barbie.
2. A ride where Barbie might get stuck or lack the thrilling experience.
3. A ride that’s just right so Barbie safely goes from point A to B at a safe (fun) speed.

**The Zip Line Ride:**

* We know the height of the second story is 20 feet.
* Sketch three diagrams of your zip lines on your whiteboard.
* Calculate and label everything: distances, cable length, costs.
* Draw three diagrams of your zip line rides in your graph paper notebook.
* Obtain approval via your permit.
* Get your doll, harness, and pulley system.

\***As a group, decide which of your zip lines you will be constructing on school.**

**CHALLENGE: Let’s say that you start from the fourth story, which is 40 feet from the ground. How much money would you need to make a safe but fun ride for Barbie this time?**

**What if you can start from ANY height? How far from the base of the building would the lower end of the zipline need to be? What would be the necessary budget?**