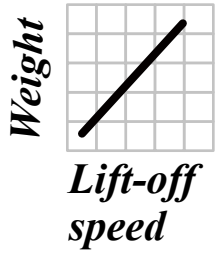
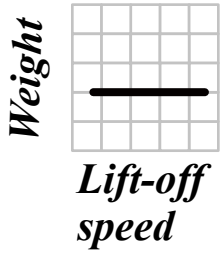
# iFly Lab 1

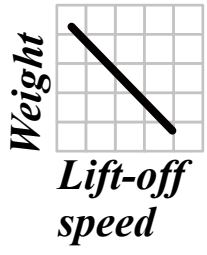
**Obtain the video. In it, you will see various playground balls at iFly. The air speed is slowly increased until each ball lifts off.**

1. Since they all have the same size, what accounts for the fact that some lift off before others?

2. If we graph the weight of the ball vs lift-off speed, what do you guess the graph will look like? (circle it)



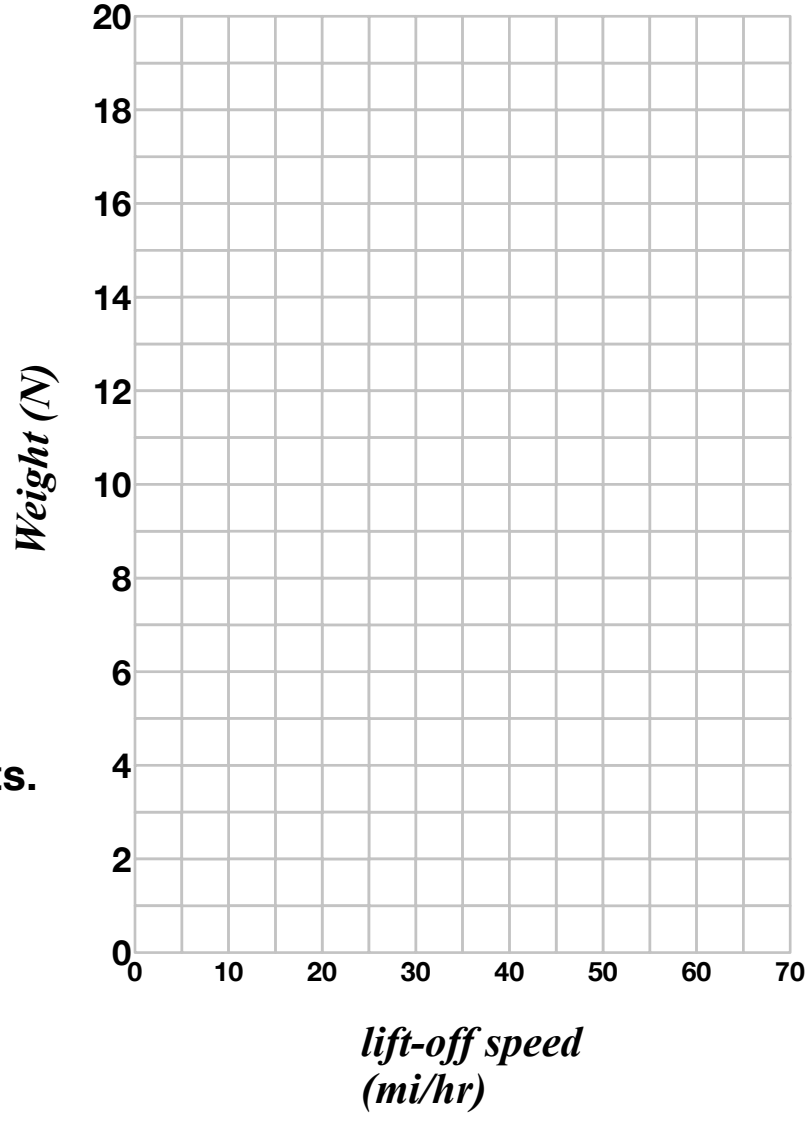

**The balls will lift off in order of weight. Use the video to keep track of the lift-off speed of each one. It is not always easy to see when a ball lifts off - just do your best. The USA ball is not on the list! Note its lift-off speed separately.**

| Weight (N) | Lift-off Speed (mi/hr) |
|---|---|
| 3 N | |
| 6 N | |
| 11 N | |
| 12 N | |
| 15 N | |

USA ball: _____ mi/hr

**Draw a line of best fit through your data points. Use your line to determine the weight of the USA ball.**

**USA ball: _____ N**

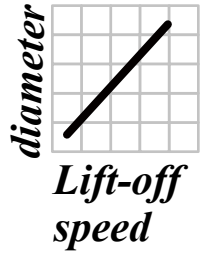


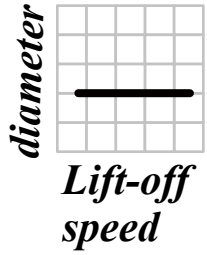
# iFly Lab 2

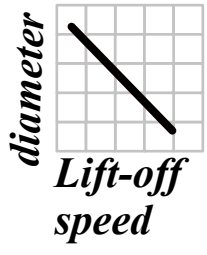
**Obtain the video. In it, you will see various playground balls at iFly. The air speed is slowly increased until each ball lifts off.**

1. Since they all have the same weight, what accounts for the fact that some lift off before others?

2. If we graph the diameter of the ball vs lift-off speed, what do you guess the graph will look like? (circle it)




**The balls will lift off in reverse order of diameter. Use the video to keep track of the lift-off speed of each one. It is not always easy to see when a ball lifts off - just do your best. The USA ball is not on the list! Note its lift-off speed separately.**

| Diameter (in) | Lift-off Speed (mi/hr) |
|---|---|
| 13 | |
| 8.5 | |
| 7 | |
| 6 | |
| 5 | |

USA ball: _____ mi/hr

**Draw a line of best fit through your data points. Use your line to determine the diameter of the USA ball.**

**USA ball: _____ inches**