Project 3: Sensor Models

From Project 2…

- Take at least 5 samples each for: 8, 9, 10, 14, 20, 30, 40, 60, 80 cm.
- Two plots for each sensor:
  - Mean sensor value as a function of distance (cm)
  - Mean sensor value as a function of 1/distance (1/cm)

Component 2: Sensor Model

Fit a *simple* function to your data

- 8cm should be captured well
- Adjust the other parameters of your function to capture the rest of your data as best as possible

Component 3: Implement the Model

- Implement the function:

```
float read_distance()
```

  - Return value in cm

- This function must not contain printf() or delay()

Component 4: Test

- Take at least 5 samples each for: 8, 9, 10, 14, 20, 30, 40, 60, 80 cm.
- Plot sensed distance value as a function of true distance
- Your results should be what you expect!

Hints

- Make sure that the signal is reflecting off a vertically-oriented surface and not the table
- Start this project early
- Keep things simple