Raw Data Sheet

Student Name: Stetson Reger

Team members:

1.- _____ 2.- _____

3.- _____ 4.- _____

Instructor: Stetson Reger

Acceleration Through an Atwood Machine

Record the masses of each trial, and record the slope of the velocity curve. Make one printout per group to be handed in, and note down the section title. Be sure to write down the units.

Trial 1: m_1: 0.250 Kg m_2: 0.260 Kg Slope: 0.0544 Plot(v vs. t): ☐

Trial 2: m_1: 0.250 Kg m_2: 0.270 Kg Slope: 0.151 Plot(v vs. t): ☐

Trial 3: m_1: 0.250 Kg m_2: 0.280 Kg Slope: 0.418 Plot(v vs. t): ☐

Static Friction on a Horizontal Surface

Record the type of surface and the maximum force applied before the 2 kg mass started to move. Make one printout per group to be handed in, and note down the section title along with corresponding surface. Include units.

Surface: Wood on Table

Maximum force: -9.47N

Plot (F vs. t): ☐

Surface: Felt on Wood Table

Maximum force: -5.20N

Plot (F vs. t): ☐

Kinetic Friction on an Inclined Surface

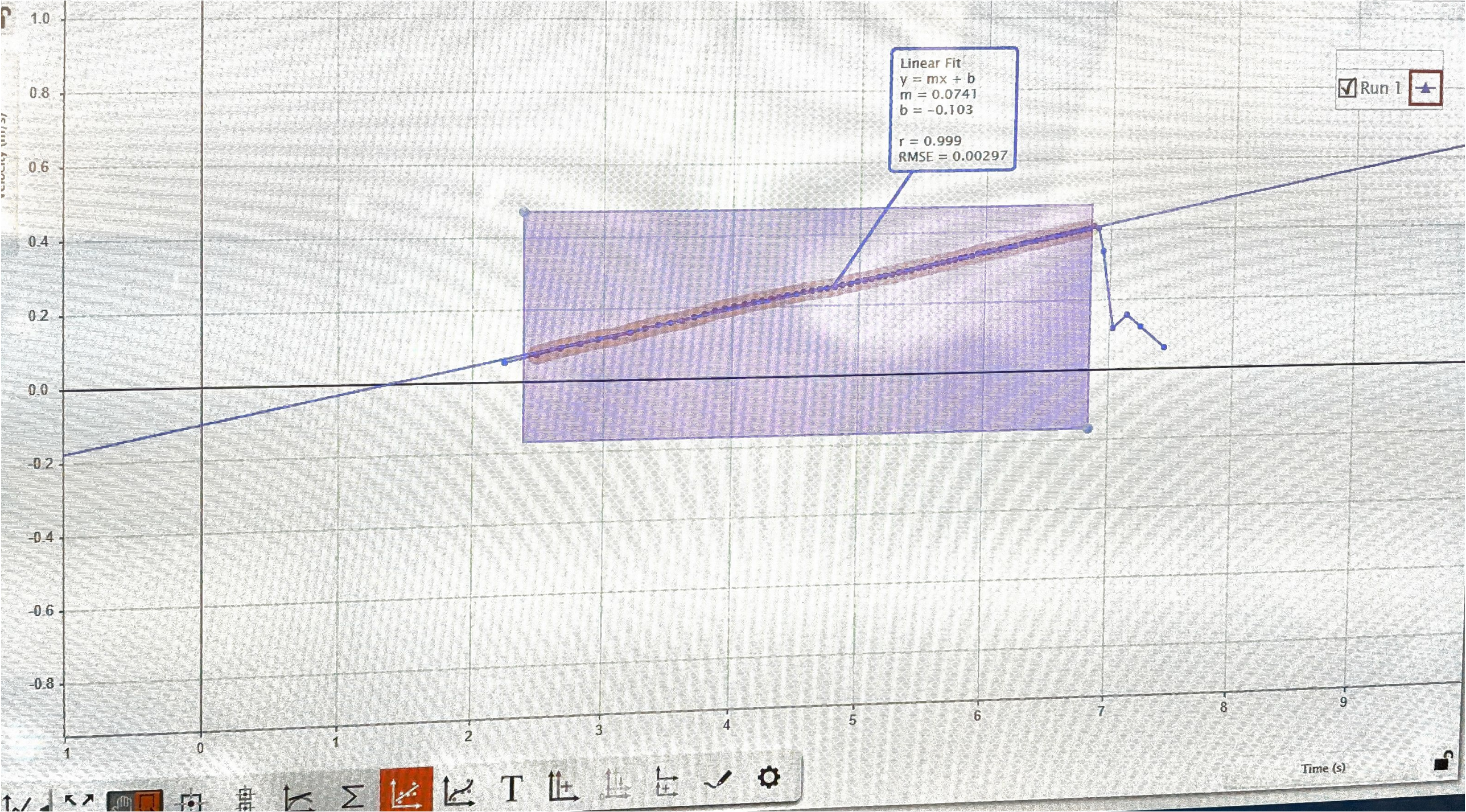
Record the mass of the wooden block, the inclination angle and the slope of the velocity curve. Make one printout per group to be handed in, and note down the section title. Be sure to write down the units.

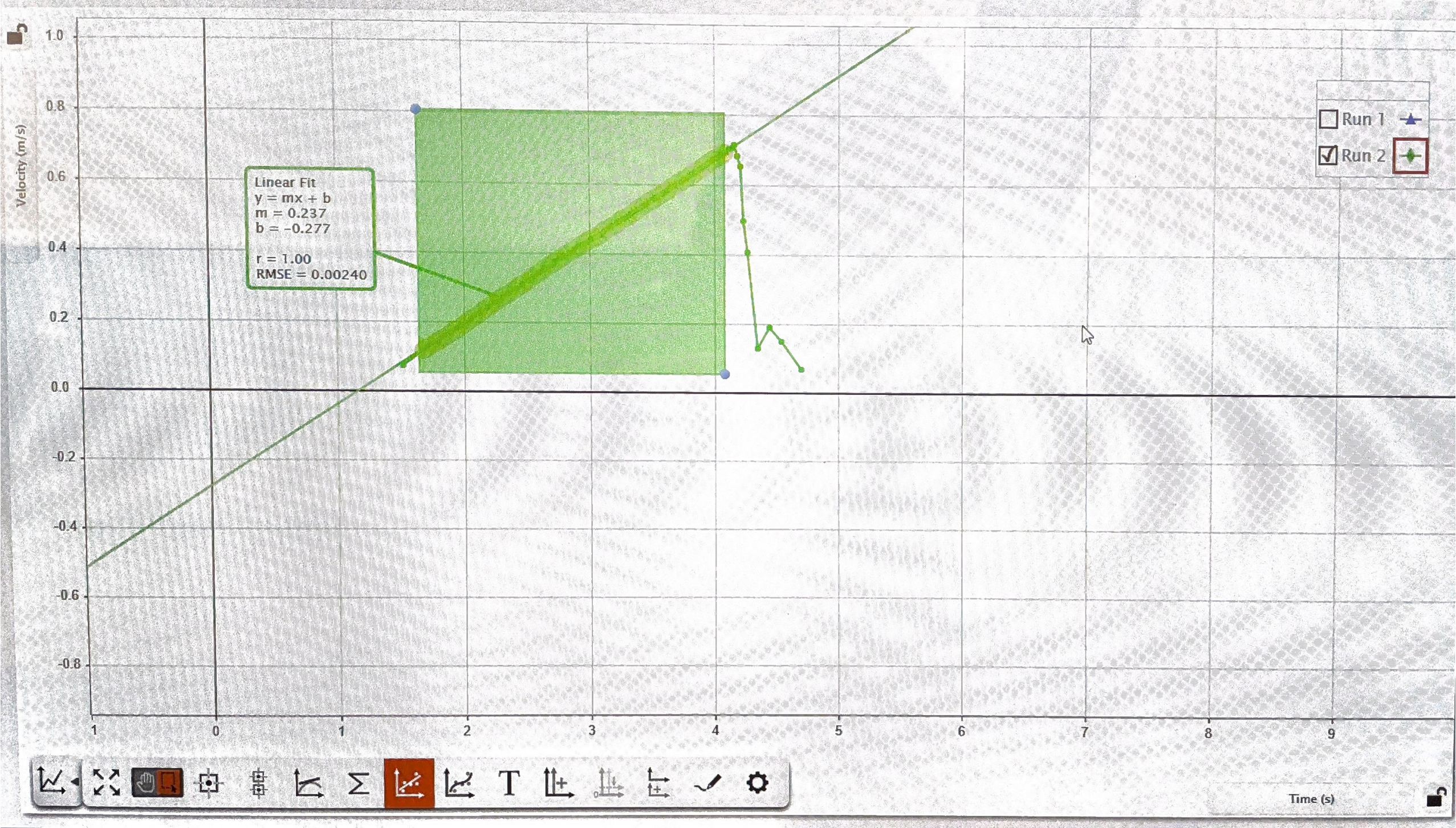
m_{block}: 232.6g

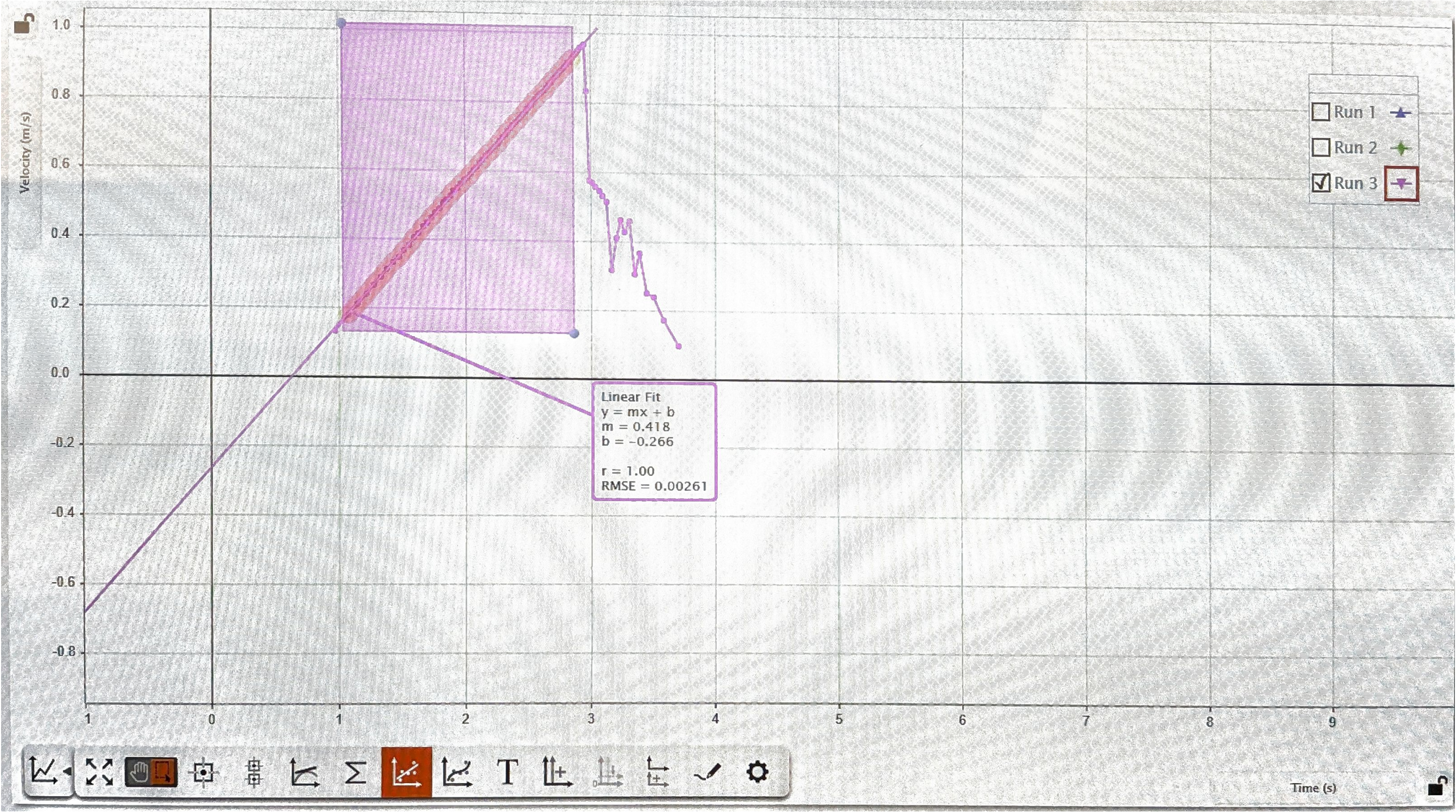
Angle: 20°

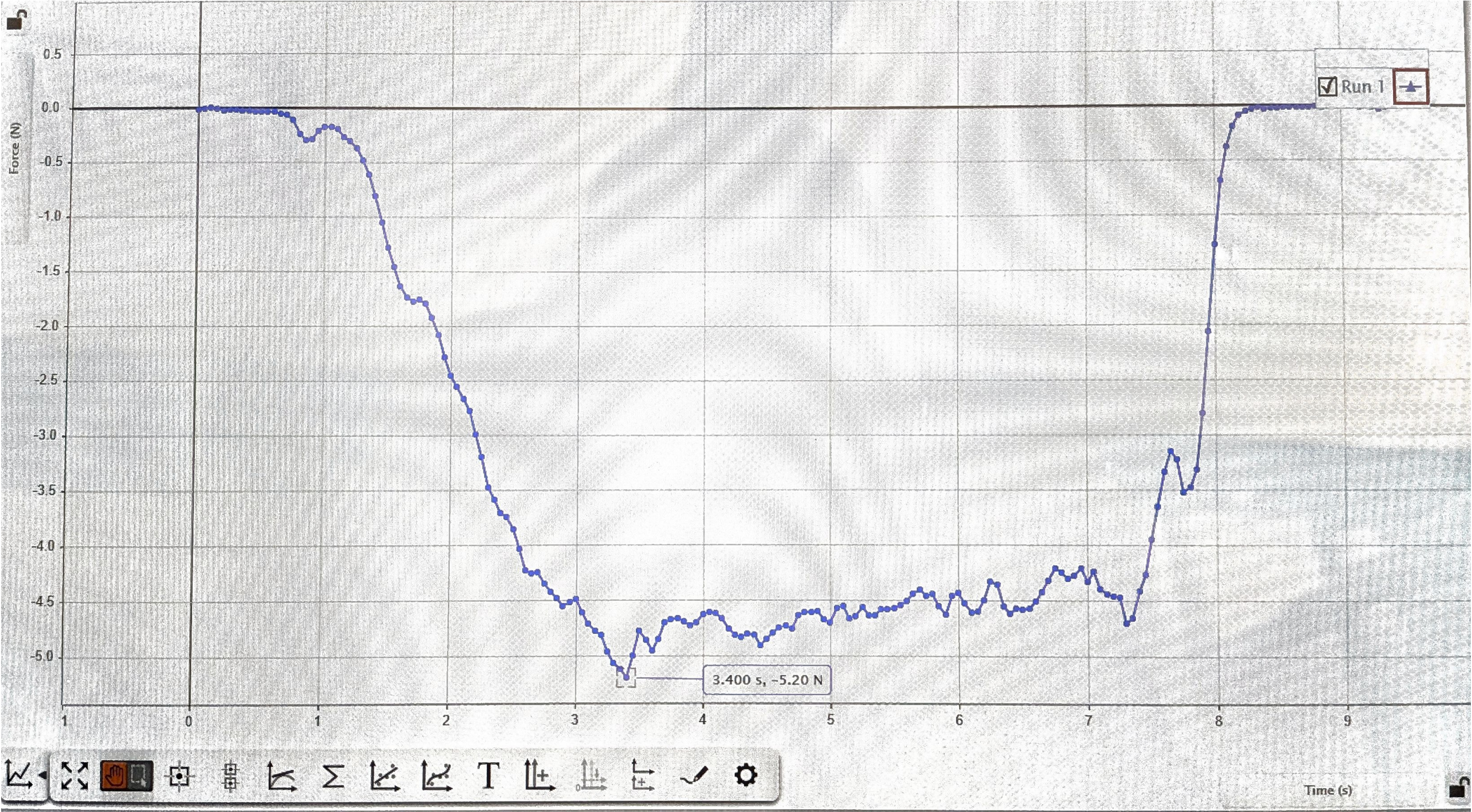
Slope: 0.0978

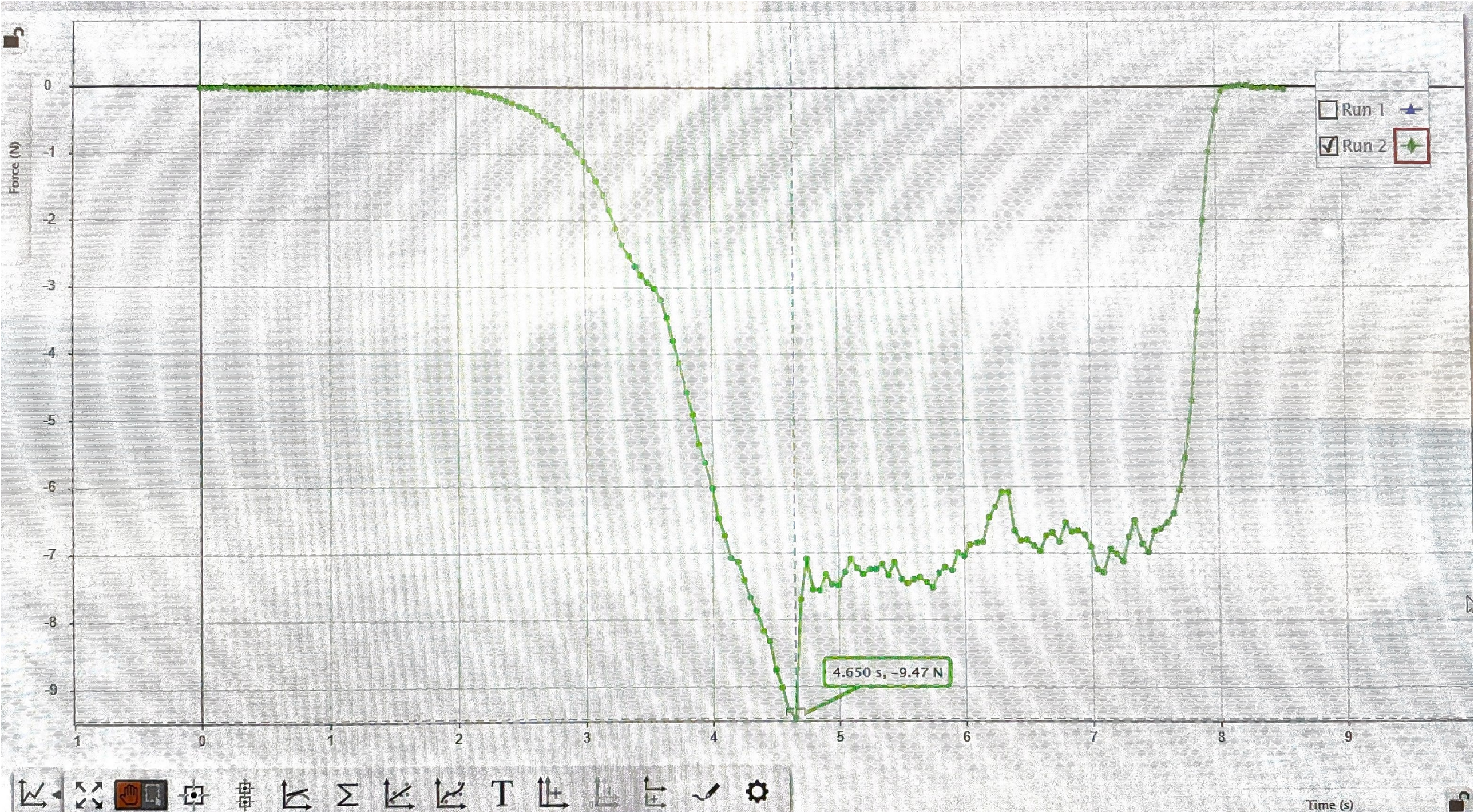
Plot (v vs. t): ☐

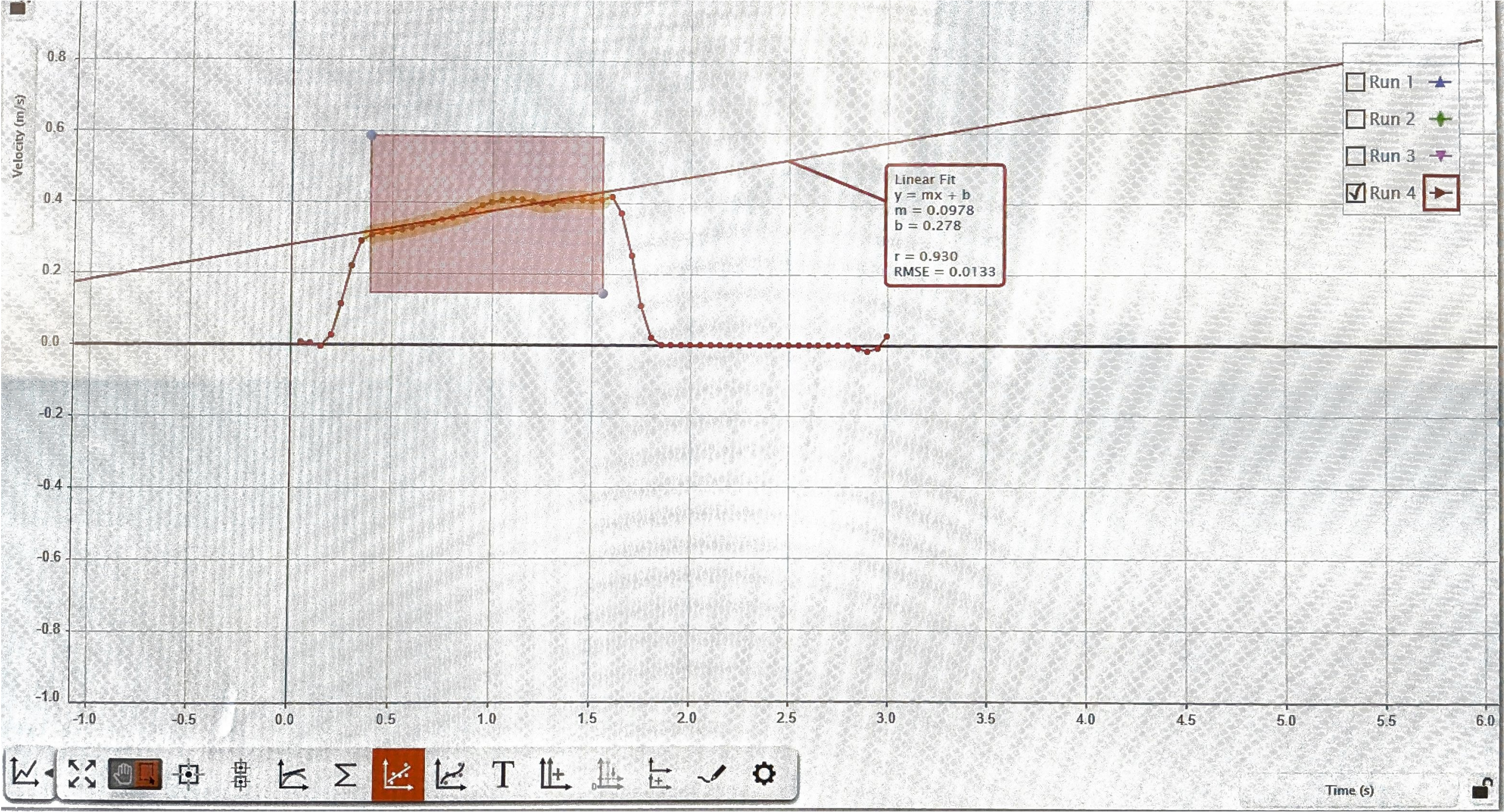

Linear Fit
y = mx + b
m = 0.0741
b = -0.103
r = 0.999
RMSE = 0.00297
Run 1
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1
0
1
2
3
4
5
6
7
8
9
Time (s)


Linear Fit
y = mx + b
m = 0.237
b = -0.277
r = 1.00
RMSE = 0.00240
Run 1
Run 2
Velocity (m/s)
Time (s)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1
0
1
2
3
4
5
6
7
8
9


Velocity (m/s)
1.0
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
1
0
1
2
3
4
5
6
7
8
9
Time (s)
Run 1
Run 2
Run 3
Linear Fit
y = mx + b
m = 0.418
b = −0.266
r = 1.00
RMSE = 0.00261


Force (N)
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
-5.0
Run 1
3.400 s, -5.20 N
1
0
1
2
3
4
5
6
7
8
9
Time (s)


Force (N)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
1
0
1
2
3
4
5
6
7
8
9
Run 1
Run 2
4.650 s, -9.47 N
Time (s)


Velocity (m/s)
0.8
0.6
0.4
0.2
0.0
-0.2
-0.4
-0.6
-0.8
-1.0
-1.0
-0.5
0.0
0.5
1.0
1.5
2.0
2.5
3.0
3.5
4.0
4.5
5.0
5.5
6.0
Time (s)
Run 1
Run 2
Run 3
Run 4
Linear Fit
y = mx + b
m = 0.0978
b = 0.278
r = 0.930
RMSE = 0.0133