

Name \_\_\_\_\_

Period \_\_\_\_\_ Date \_\_\_\_\_

## UNIT I CP Worksheet 5: Best Fit Curves

- ✓ Using “CP Graphical Methods-Summary” to help, graph each data set in *Logger Pro*. Assume the 1st column in each set of values to be the **independent** variable and the 2nd column the **dependent** variable.
- ✓ State the relationship (in words) between the variables. Use complete sentences.
- ✓ Determine the mathematical model (equation) for the best fit curve.
- ✓ Print each of your graphs and staple them to this sheet.
- ✓ Use your graphs and/or mathematical models to answer the questions.

Data set #1

V (m <sup>3</sup> )	P (pa)
.1	40
.5	8
1	4
2	2
4	1
5	.8
8	.5
10	.4

What is the relationship between volume (V) and pressure (P)?

Mathematical model #1

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What would the pressure be for a volume of 3m<sup>3</sup>?

What would the volume be for a pressure of 15 pa?

Data set #2

t (s)	x (m)
.1	.03
.2	.12
.5	.75
1	3
2	12
3	27
4	48
5	75

What is the relationship between time (t) and distance (x)?

Mathematical model #2

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What would the distance be for a time of 23.5 s?

What would the time be for a distance of 20 m?

Data set #3

<b>A</b> <b>(months)</b>	<b>W</b> <b>(lbs)</b>
1	7.3
2	9.4
3	10.5
4	12.0
5	13.0
6	14.3
7	15.2
8	16.7

What is the relationship between age (A) and weight (W)?

Mathematical model #3

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What would the weight be for an age of 5.5 mon?

What would the age be for a weight of 11 lb?

Data set #4

<b>t</b> <b>(s)</b>	<b>v</b> <b>(m/s)</b>
.3	10
1.2	20
2.7	30
4.8	40
7.5	50
10.8	60
14.7	70
19.2	80

What is the relationship between time (t) and velocity (v)?

Mathematical model #4

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What would the velocity be for a time of 16 s?

What would the time be for a velocity of 35 m/s?