

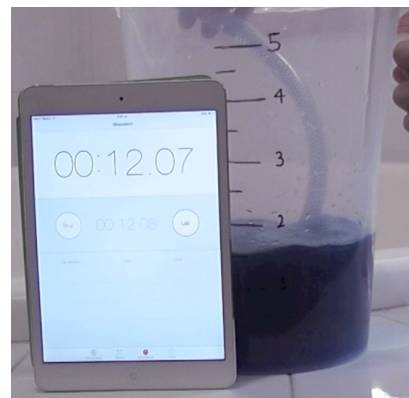
Day 1 Summary

1. Wordsmorg

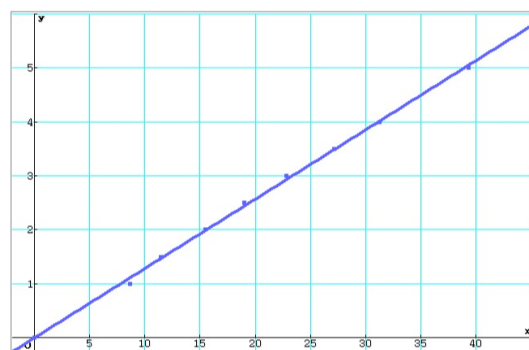
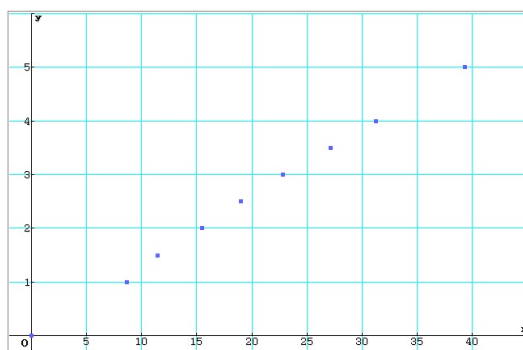
2. Paper folding activity

- Notion of a function as describer of a process with a single input
- Triangle with changing area as defined by the function
- It 'seems' that the max. area corresponds to a triangle height that is $\frac{1}{3}$ of the A4 papers 'height' – 70 mm – curious?

3. Taryn and the shower



time (s)	0	8.6	11.43	15.51	19	22.85	27.16	31.28	39.34
volume (litres)	0	1	1.5	2	2.5	3	3.5	4	5



Straight line of best fit is approximately:

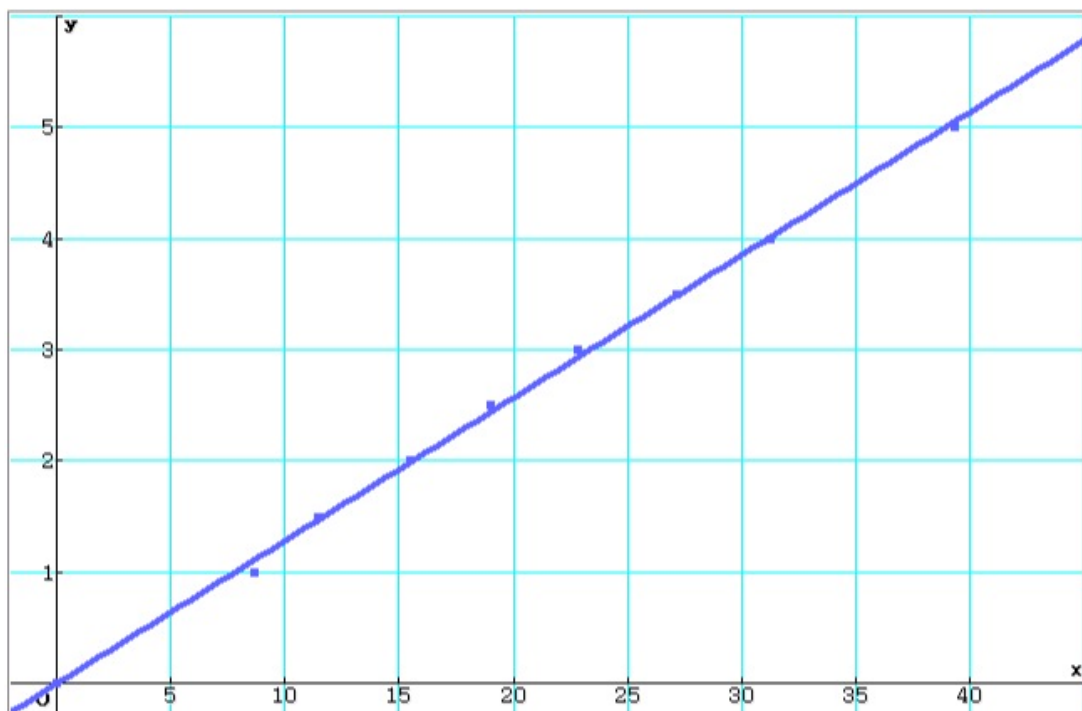
$$V = 0.128 T + 0$$

Review Task 1

What does the value 0.128 mean in terms of the water/shower?
(Be sure to include the absolutely critical pair of words in your response.)

Review Task 2

Illustrate the idea that 0.128 is portraying on the following graph.



Review Task 3

Determine the total amount (volume) of water that would be used in 20-minute shower if the water was escaping in the same way as in the video.

Review Task 4

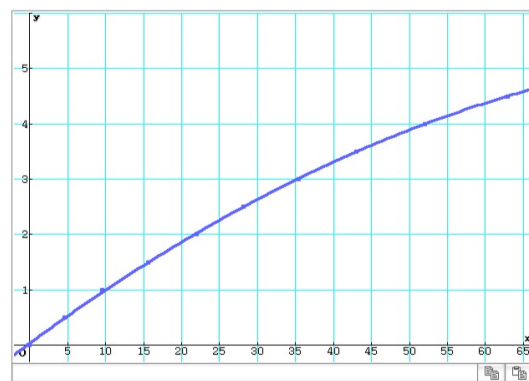
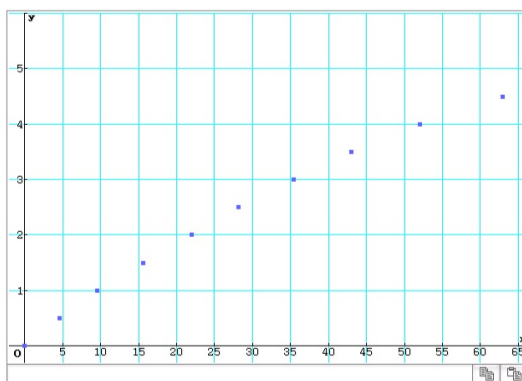
How much water is sensible to use when taking a shower? Seriously!
How should the water be escaping if a 20-minute shower was to use less than 30 litres?

****Note that many people fast their shower running way faster than was seen in this video – Tayla, Heather,**

4. Gravity fed bucket



time (s)	0	4.6	9.6	15.6	22	28.2	35.4	43	52	62.9
volume (litres)	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5



Assuming the process of escape behaves in a quadratic manner, the quadratic of best fit is approximately:

$$V = -0.0005T^2 + 0.1T + 0$$

Review Task 5

How are the two situations we have studied different?

Review Task 6

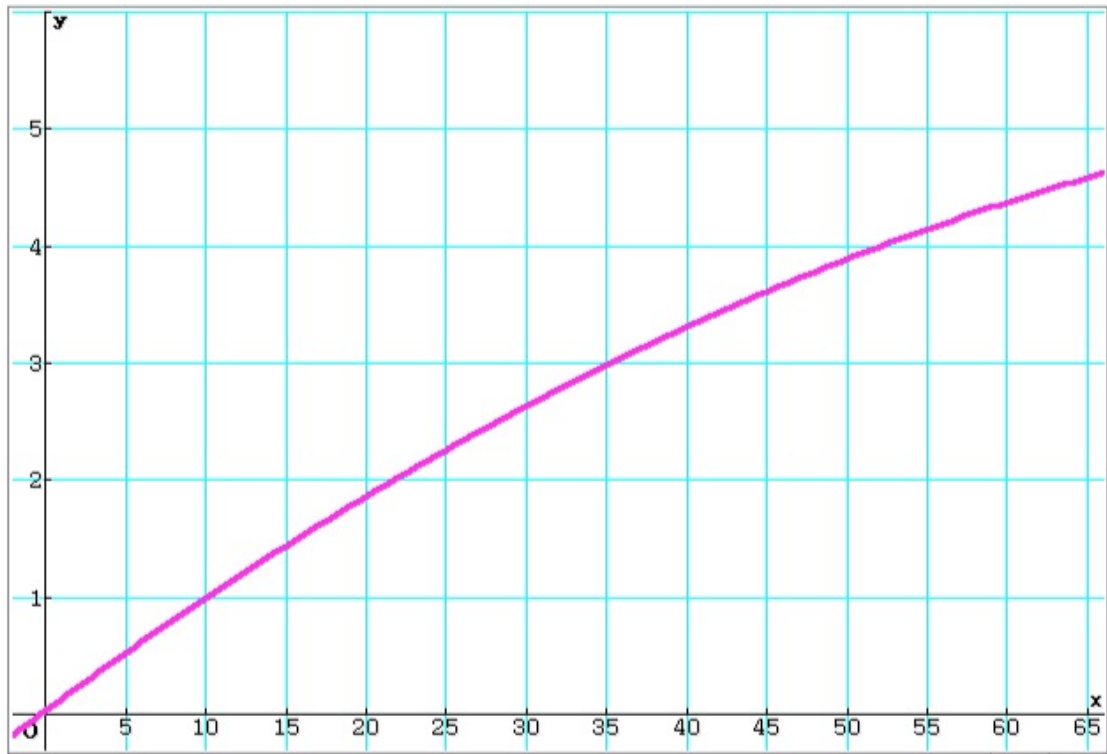
What does $V = -0.0005T^2 + 0.1T + 0$ allow you to calculate directly?

Review Task 7

What does $V = -0.0005T^2 + 0.1T + 0$ NOT allow you to calculate directly? Why?

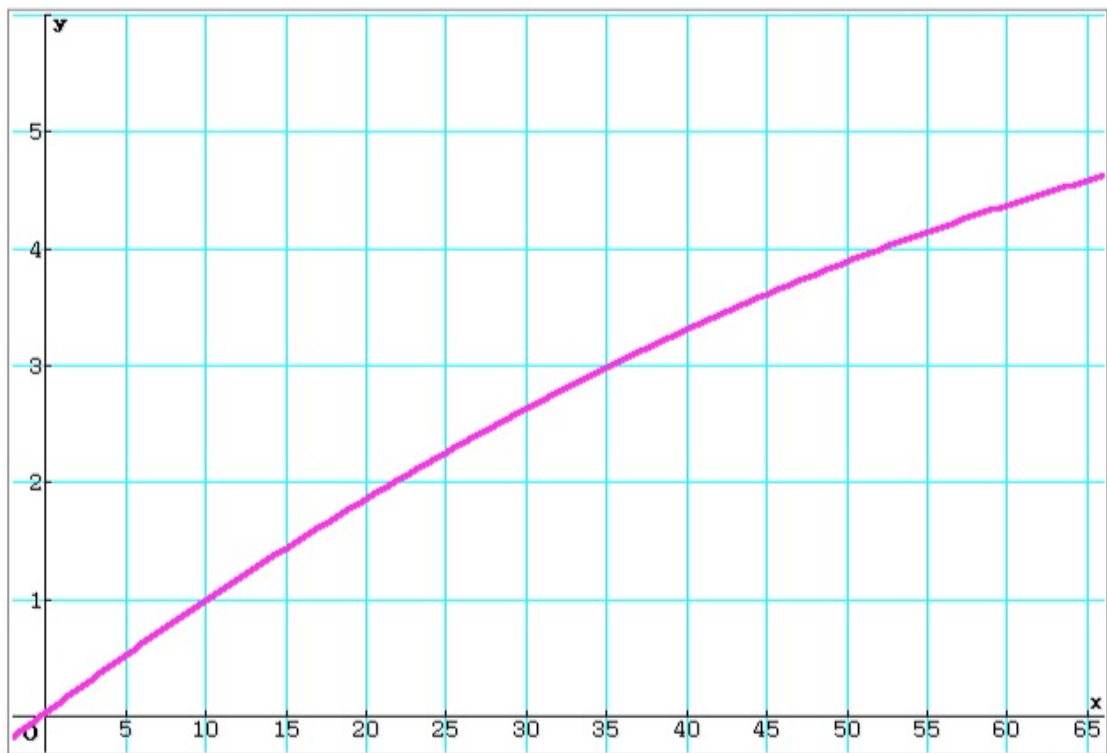
Review Task 8

Using the graph below, do your best to make an estimate of the rate of flow of the water into the jug at 15 seconds after starting.



Review Task 9

Using the graph below, do your best to make an estimate of the rate of flow of the water into the jug at 50 seconds after starting.



Review Task 10

How accurate are your answers to the two previous tasks?

Explain your reasons for giving the answer you have, in detail.

Review Task 11

So far, has this course been similar or different to your normal mathematics classes.

If similar, please say how. If different, please say how

So far, do you think it has been helpful? Why or why not? Be honest.