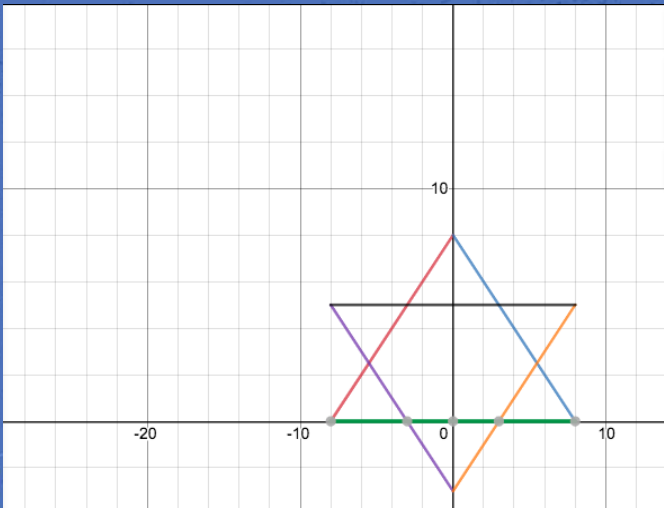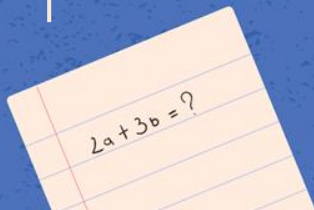2021

By 2N

January

Make a David's star on Desmos calculator. It should look something like this:

SUN	MON	TUE	WED	THU	FRI	SAT
					01	02
03	04	05	06	07	08	09
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

February

An expensive gift for Valentines day has a price of 87.60$ in two shops. One offers a 15% discount, and the other a discount of 10.65$. Which is the better buy, and by how much?
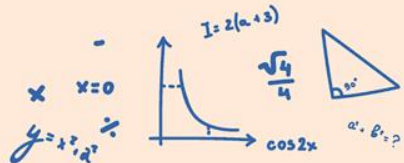
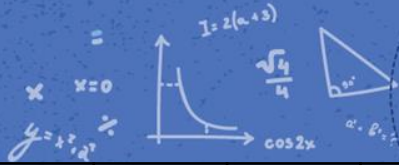| SUN	MON	TUE	WED	THU	FRI	SAT
	01	02	03	04	05	06
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

March

A rectangular garden full of spring flowers is four times as long as it is wide. If it has a perimeter of 340 m, what are its dimensions?

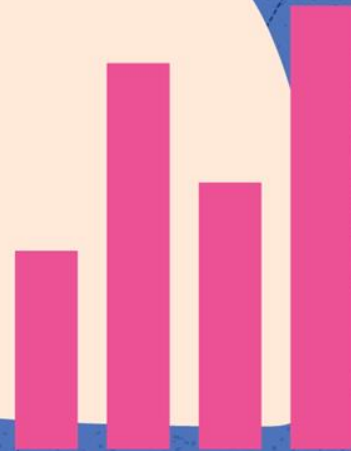| SUN	MON	TUE	WED	THU	FRI	SAT
	01	02	03	04	05	06
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

April

SUN	MON	TUE	WED	THU	FRI	SAT
				01	02	03
04	05	06	07	08	09	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

In April many people have allergies. Out of 1000 students 36% experince allergies. How many students have allergies?

May

In spring, a bunny hops on a hill. The hill has a parabolic shape and its span at the ground is 128 m. Bunny stopped for a rest at the point which is 40 m horizontally from the foot of the hill and 88 m high. At what point is the bunny at the highest point of the hill?

SUN	MON	TUE	WED	THU	FRI	SAT
						01
02	03	04	05	06	07	08
09	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

June

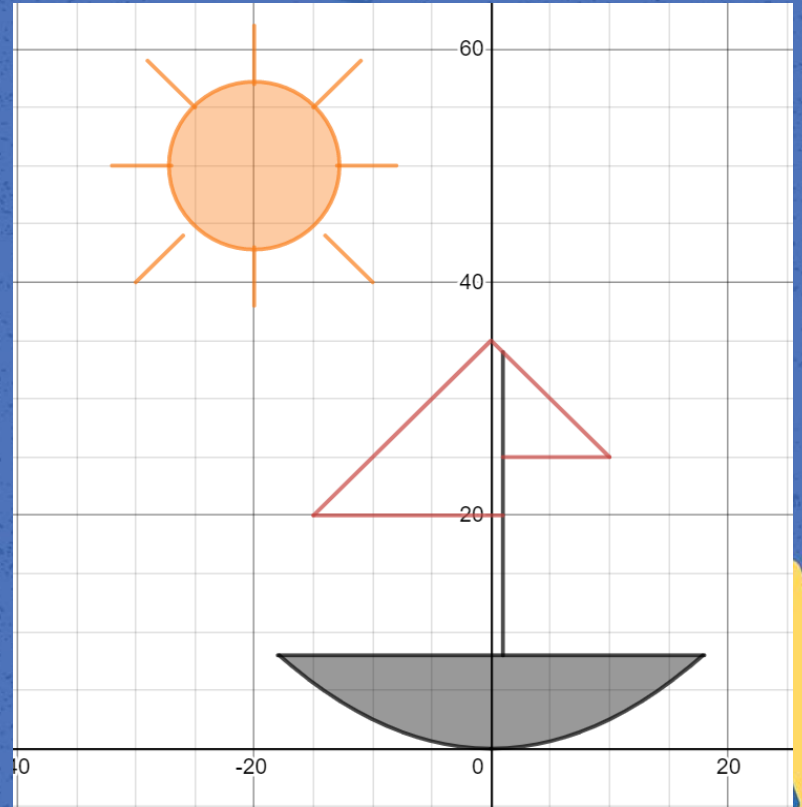| SUN	MON	TUE	WED	THU	FRI	SAT
		01	02	03	04	05
06	07	08	09	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	28	30			

Sketch the following parabola:

$$f(x) = (3 - x)(5 + x)$$

July

SUN	MON	TUE	WED	THU	FRI	SAT
				01	02	03
04	05	06	07	08	09	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Imagine that the sun went down and the moon came up. Replace the sun with the moon.
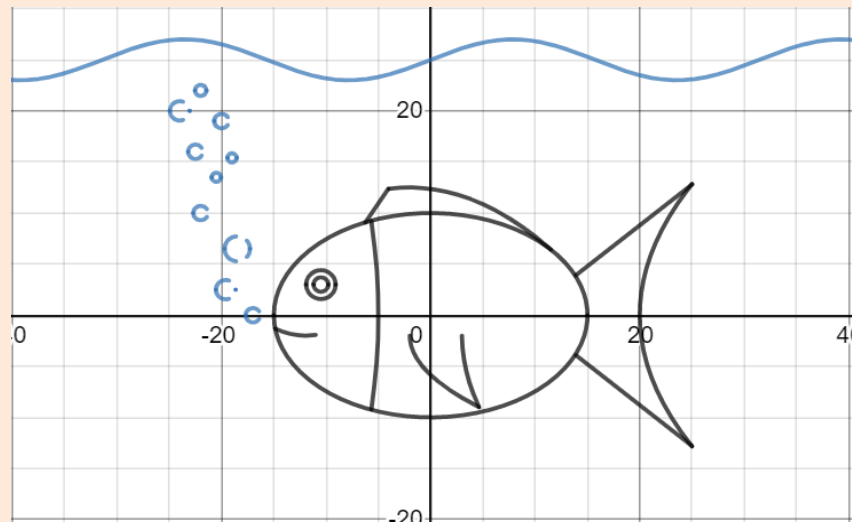
August

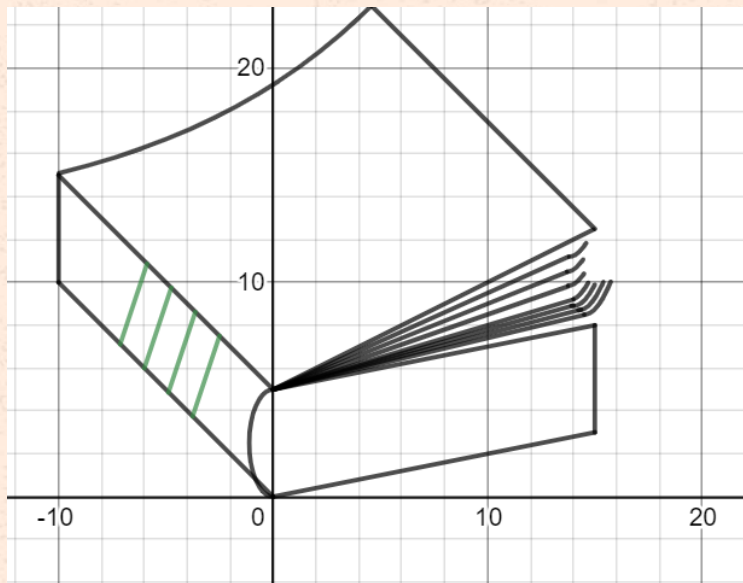| SUN	MON	TUE	WED	THU	FRI	SAT
01	02	03	04	05	06	07
08	09	10	11	12	13	13
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

What formulas would you use to make the fish face the other way (right)?

September

SUN	MON	TUE	WED	THU	FRI	SAT
			01	02	03	04
05	06	07	08	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	28	30		

Look at the following graph and draw another green line on the cover. Make sure that the line is parallel to the other green lines.

October

Find the point of intersection of the curves:
$$y = x + 2$$
$$y = x^2$$

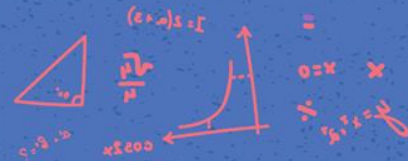| SUN	MON	TUE	WED	THU	FRI	SAT
					01	02
03	04	05	06	07	08	09
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

November

SUN	MON	TUE	WED	THU	FRI	SAT
	01	02	03	04	05	06
07	08	09	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

The number of cold days in November is 20. The number of rainy days in November is 13. The number of both cold and rainy days is 7.

a) Make a Venn Diagram and present the given information.

b) What is the number of days that are not cold or rainy?

c) What is the sum of days that are cold and days that are rainy but not both at once?

December

SUN	MON	TUE	WED	THU	FRI	SAT
			01	02	03	04
05	06	07	08	09	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	28	30	31	

The length of a rectangle is 5 cm longer than its width. If the area of the rectangle is $84 cm^2$, find the length of the rectangle.