

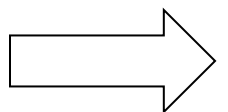
Name: _____

IB Math SL: Internal Assessment Topic Ideas

**When we return from the summer, we will start the process of writing our Mathematical Explorations (IA's) immediately. Part of your summer assignment is to begin brainstorming ideas...Please spend some time filling out this form and thinking about a possible topic(s). The expectation is that you "explore" a mathematical topic that is of interest to you.

Due Date: first day of school

1. What are some of your hobbies (anything that you are passionate about)?
2. Are there any mathematical connections that you can think of? What are they (be specific)?
3. What was your favorite chapter(s) in Pre-IB/Alg2?
4. What did you like about this chapter?
5. What were the sections that you liked best?
6. What real-life applications can you find in the chapter (look at the chapter preview/intro or the word problems)?



7. What areas (real-world applications, extensions, or just something that caught your attention) are related to this chapter and/or section?

8. What are some other areas in math (**at least** to the level of pre-IB/Alg 2) that interest you?

9. List three areas that you think might be a possible topic for you Mathematical Exploration.

1.)

2.)

3.)

10. For each of these possible topics, what will the math demonstrate?

1.)

2.)

3.)

Summer Assignment for Math SL

The assignments below need to be completed **prior** to the start of the school year.
 The assignments below will be **collected** on the first day of class.
 There will be a **test(s)** on the assignments below at the start of the school year.
 You will be expected to **remember** and **apply** all of these concepts for Math SL

- Text book problems (below) from CD-Rom (be sure you've saved it to your hard drive) or check out the textbook for the summer (do this **prior** to the end of the school year)
- Show all work/set-up for every problem
- Label the section and problem number

<u>Section</u>	<u>Page</u>	<u>Problems</u>		<u>Section</u>	<u>Page</u>	<u>Problems</u>
Chapter 1				<i>chapter 4 continued</i>		
1A	49	4		4F	133	3a
1B	50	5f		4G	136	1a
1D	56	3a		4H	139	11
1G	62	1		Chapter 5		
1H	64	9a		5A	145	5d, 8
Chapter 2				5B.1	147	4d
2C	75	9a		5B.2	148	1e, 6c
2D.1	78	7		5B.3	149	3biii
2D.2	80	7		5B.4	151	6
2D.3	81	1		Chapter 6		
2E.1	83	2a		6A.1	159	3a
2E.2	84	3c, 6		6A.2	160	3c
2E.3	86	1c, 4c		6A.3	161	2b
2E.4	88	5a		6B	163	2e
Chapter 3				6C.1	170	8h
3C	99	7h		6C.2	171	2d
3D	101	3i, 5h		6D	175	4e
3E.1	102	2k		6E	178	2c, 3c, 6
3E.2	103	5i		6G	184	9
3F	105	3c, 5b		Chapter 7		
3G	109	4		7A	193	3b
3H.1	110	2		7B	195	2a
3H.2	113	3		Chapter 8		
Chapter 4				8B	201	5b
4A	121	5c, 6g		8C.1	207	7a,c
4B	124	6g		8C.2	209	5b
4C.1	127	2i, 6f		8C.3	212	1, 2, 3f, 7g,i
4C.2	128	3d,f				
4D.1	129	6g				
4D.2	131	5d				
4E	132	2f, 3e				

<u>Section</u>	<u>Page</u>	<u>Problems</u>
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Chapter 9

9A	220	1a
9B	223	3
9C.2	228	2
9D	231	8

Chapter 12

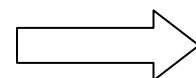
12A.2	313	1
12B.1	315	1f, 2c
12B.4	321	1g
12C.1	322	2c
12C.3	326	1g
12C.4	327	4e
12D	329	4c
12G	337	2
12H	340	4b
12I	344	3, 10

Chapter 14

14A	381	4
14B.1	386	3, 5
14B.2	391	4
14B.3	393	3a-c
14C.2	398	2
14D	403	5
14F.1	408	6
14F.3	411	4
14G	413	3

Chapter 15

15D	433	3
15E.1	435	5
15E.2	437	2
15F	439	4
15G	442	5
15H	446	4, 7
15I.1	450	6
15J	455	3, 10
15k	457	1-3



Extra Problems:

1. Jill hangs her clothes out to dry every Saturday, and notices that the clothes dry more quickly some days than others. She investigates the relationship between the temperature and the time her clothes take to dry:

Temperature x ($^{\circ}C$)	25	32	27	39	35	24	30	36	29	35
Drying time y (min)	100	70	95	25	38	105	70	35	75	40

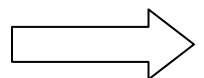
- Draw a scatter diagram for this data
 - Calculate the correlation coefficient, r (with and without a calculator)
 - Describe the correlation between temperature and drying time.
2. The table below shows how far a group of students live from school, and how long it takes them to travel there each day.

Distance from school x (km)	7.2	4.5	13	1.3	9.9	12.2	19.6	6.1	23.1
Time to travel to school y (min)	17	13	29	2	25	27	41	15	53

- Draw a scatter diagram
 - Use technology to find:
 - r
 - the equation of best fit (linear regression)
 - Pam lives 15km from school.
 - Estimate how long it takes Pam to travel to school.
 - Comment on the reliability of your estimate.
3. Ranji counts the number of bolts in several boxes and tabulates the data as follows:

Number of bolts	33	34	35	36	37	38	39	40
Frequency	1	5	7	13	12	8	0	1

- Find the five number summary for this data set
- Find the
 - range
 - IQR for this data set
- Draw a box plot of the data set
- Are there any outliers? (remember $1.5 \times IQR$)
- Verify parts a-d using technology



Answers to Extra Problems

1. b. $r \approx -0.987$
c. very strong, negative correlation

2. bi. $r \approx 0.993$
bii. $y \approx 2.16x + 1.42$
ci. $y \approx 2.16(15) + 1.42 \approx 33.8$
So, it will take Pam approximately 34 min. to travel to school
cii. This estimate is an interpolation, and the correlation coefficient indicates a very strong correlation. This suggests that the estimate is reliable.

3. a.
min = 33
 $Q_1 = 35$
 $Q_2 = 36$
 $Q_3 = 37$
max = 40
bi. 7
bii. 2
d. no