



### S3 Science skills homework task – August.

Please attempt all questions. If you get stuck, please see your teacher for help before the deadline date or use the Numeracy guide available on Bathgate Academy's school website.

#### AVERAGES

1. Calculate the average for the following sets of numbers;

- a. 7, 8, 3      b. 6, 2, 9, 7, 8, 4      c. 10, 13, 19  
d. 1, 6, 4, 3      e. 9, 7, 8, 9, 5, 2, 4, 8      f. 100, 120, 152  
g. 2.2, 3.6, 4.8, 6.2      h. 12.5, 17.1, 10.2, 12.6

2. The rate of cell division of three different species of bacteria was compared by culturing 8 individual cells of each species in separate culture dishes. The number of active bacterial cells in each culture dish was counted 24 hours later. The results are shown below;

Dish number	Species X	Species Y	Species Z
1	112	64	70
2	98	60	70
3	96	68	74
4	124	58	70
5	124	54	76
6	100	58	70
7	98	60	74
8	16	58	72
Average			

- a. Calculate the average number of cells for each species.
- b. For each species calculate the average number of bacterial cells produced per hour of the investigation?
- c. Suggest two factors for each culture dish that need to be kept the same for the results of this experiment to be valid.
- d. Which result in the experiment may have been the result of an error?

3. For 10 third year science classes in a school, the number of pupils in each class possessing a particular characteristic was recorded as shown below;

Practical set	Male	Female	Right handed	Left handed	Blue eyes	Eyes not blue
3A	8	9	15	2	10	7
3B	8	10	15	3	12	N
3C	9	9	18	0	15	3
3D	6	10	P	1	14	Q
3E	5	10	11	4	9	6
3F	8	12	19	1	R	S
3G	11	9	19	1	12	8
3H	9	9	T	2	13	U
3J	8	10	15	3	12	6
3K	8	12	17	3	8	V
Average	W	X	Y	Z	12	6

- a. Calculate all 12 missing values (N-Z) from the table.
- b. What is the average number of pupils in each practical set?