

Investigation 2

Number and Algebra

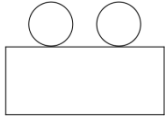
Total Marks: marks

Name: _____

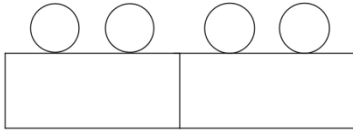
Section One- In-class

Baldivis Secondary College is looking at the option for arranging the tables and chairs in the different classrooms.

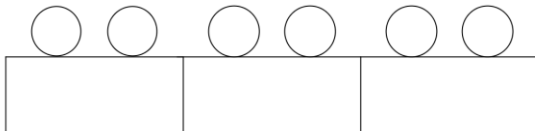
One option is to have rectangular tables. With each table having 2 chairs.



With 2 tables you need 4 chairs as in the diagram below



With 3 tables you need 6 chairs as in the diagram below



a) Draw the diagram for:

4 tables

5 tables

- b) Fill in the table showing the number of chairs and tables.

Number of tables (T)	Number of chairs (C)
1	2
2	
3	
4	
5	
6	

- c) Describe any pattern that you can see in the table.
- d) How many chairs are required for 6 tables?
- e) How many chairs are required for 7 tables?
- f) Another way to find the number of chairs is to find a rule between the number of tables and the number of chairs.
Complete the following sentence describing the rule for finding the number of chairs.

To find the number of chairs you
- g) Instead of using words to write the rule, we can use letters and symbols. Let **C** be the number of chairs and **T** be the number of tables. Write a rule using symbols and letters
- h) Using your rule, how many chairs would you need for 12 tables? Justify your answer.
- i) If I needed 32 chairs, how many tables would I need?

Investigation 2

Number and Algebra

Total Marks: 24 marks
Weighting 30%

Name: _____

Section Two – Take Home Section

Question 1

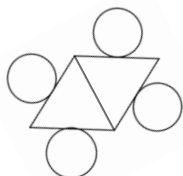
(12 marks)

Baldivis Secondary College is looking at the option for arranging the tables and chairs in the different classrooms.

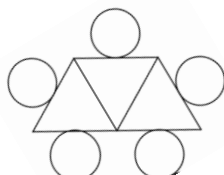
One option is to have triangular tables. With each table having 3 chairs.



With 2 tables



With 3 tables



a) Draw the diagram for:

4 tables

5 tables

- b) Fill in the table showing the number of chairs and tables.

Number of tables (T)	Number of chairs (C)
1	3
2	
3	
4	
5	

- c) Describe any pattern that you can see in the table.

- d) How many chairs are required for 6 tables?

- e) How many chairs are required for 7 tables?

- f) Write a sentence describing the relationship between the number of tables and the number of chairs.

- g) Let **C** be the number of chairs and **T** be the number of tables. Write a rule using symbols and letters between the number of tables and the number of chairs.

- h) Using your rule, how many chairs would you need for 10 tables? Justify your answer.

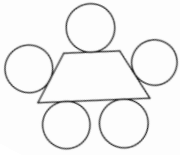
- i) If I needed 30 chairs, how many tables would I need?

Question 2

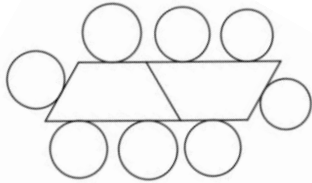
(12 marks)

Another option is to arrange the tables and chairs differently. As shown in the diagrams below

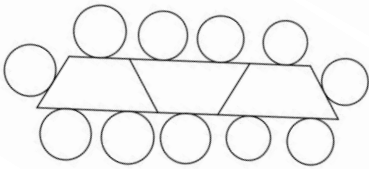
With 1 table



With 2 tables



With 3 tables



a) Draw the diagram for:

4 tables

5 tables

b) Fill in the table showing the number of chairs and tables.

Number of tables (T)	Number of chairs (C)
1	
2	
3	
4	
5	

c) Describe any pattern that you can see in the table.

d) How many chairs are required for 6 tables?

e) How many chairs are required for 7 tables?

f) Complete the following sentence describing the relationship between the number of tables and the number of chairs.

The number of chairs is equal to _____ times the number of tables plus _____.

g) Let **C** be the number of chairs and **T** be the number of tables. Write a rule using symbols and letters between the number of tables and the number of chairs.

h) Using your rule, how many chairs would you need for 12 tables? Justify your answer.

i) If I needed 32 chairs, how many tables would I need?