

NUMBER PATTERNS-INVESTIGATION*

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Abstract

- i) An investigation involving filling in tables by applying given rules or by discovering the rule first.
- ii) Completing conjecture statements based on natural numbers and then proving them.

Mathematics

Investigation for Grade 10

A. Apply the given rule to complete the tables below:

1.

n	1	2	3	4	5	6	7	8
n-5	-4	-3						

Table 1

2.

n	1	2	3	4	5	6	7	8
2n+1	3	-5						

Table 2

3.

n	1	2	3	4	5	6	7	8
3n-2	1	4						

Table 3

4.

n	1	2	3	4	5	6	7	8
5n+7	12	17						

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Table 4

B. Find the rule used in each table and use it to generate the answers in each table below:

1.

1	2	3	4	5	6	9	n	17	20
3	9	15	21	27	33				

Table 5

2.

1	2	3	4	5	6		n		20
11	23	35	47	59	71				

Table 6

3.

1	2	3	4	5	6		n		20
-4	4	12	20	28	36				

Table 7

4.

1	2	3	4	5	6		n		20
0	7	14	21	28	35				

Table 8

C. Complete and then prove each of the following conjectures:

1. The sum of any two consecutive odd natural numbers is _____

1. The sum of the any two consecutive even natural numbers is _____