M9 - 6.1 - Patterns WS

What is the missing number in the pattern?

1 , 3 , 5 , 7 , _____   3 , 6 , 12 , _____ , 48   5 , 20 , _____ , 320

Find the common difference and find the next three numbers.

20 , 23 , 26 , 29 , _____ , _____ , _____ $d =$
                 t_5 t_6 t_7

15 , 20 , 25 , 30 , _____ , _____ , _____ $d =$
                 t_5 t_6 t_7

$-3, -8, -13,$ _____ , _____ , _____ $d =$
            t_4 t_5 t_6

9 , 6 , 3 , 0, _____ , _____ , _____ $d =$
       t_5 t_6 t_7

Determine the 20th term for each of the following linear patterns.

$t_n = t_1 + d(n - 1)$

$t_{20} = t_1 + d(20 - 1)$

2,6,10,14, ... $d =$ $t_1 =$ $n =$ $t_{20} =$

5,7,9,11,... $d =$ $t_1 =$ $n =$ $t_{20} =$

14,7,0, -7, ... $d =$ $t_1 =$ $n =$ $t_{20} =$

M9 - 6.1 - Vertical Tables WS

Write an equation relating *t* to *n*.

n	t
1	2
2	3
3	4
4	5

n	t
1	0
2	1
3	2
4	3

n	t
1	3
2	6
3	9
4	12

n	t
1	3
2	5
3	7
4	9

n	t
1	4
2	7
3	10
4	13

n	t
1	2
2	6
3	10
4	14

n	t
1	−2
2	−4
3	−6
4	−8

n	t
1	0
2	−1
3	−2
4	−3

n	t
1	−1
2	−3
3	−5
4	−7

M9 - 6.1 - Patterns WS

Write an equation relating *t* to *n*.

n	1	2	3	4
t	4	5	6	7

n	1	2	3	4
t	-1	0	1	2

n	1	2	3	4
t	2	4	6	8

n	1	2	3	4
t	1	3	5	7

n	1	2	3	4
t	2	5	8	11

n	1	2	3	4
t	6	10	14	18

n	1	2	3	4
t	1	−1	−3	−5

n	1	2	3	4
t	−2	−5	−8	−11

M9 - 6.1 - Polygon Pattern WS

Find the number of toothpicks of the 15th pattern of squares with side lengths of 1 toothpick.

Write the table of values.

n	t

Write the equation

Plug in the 15 for n and solve.

Determine the number of toothpicks needed to produce 18 polygons.

How many Triangles with 51 toothpicks?