

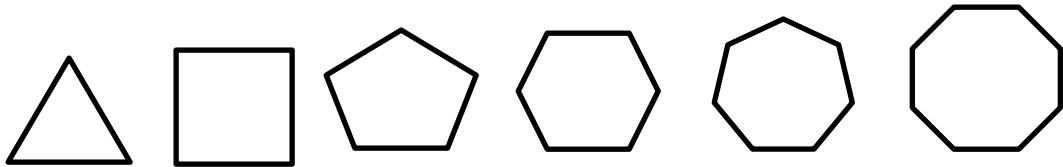
SHARP

Worksheet 6 Memorandum: Numeric and Geometric Patterns

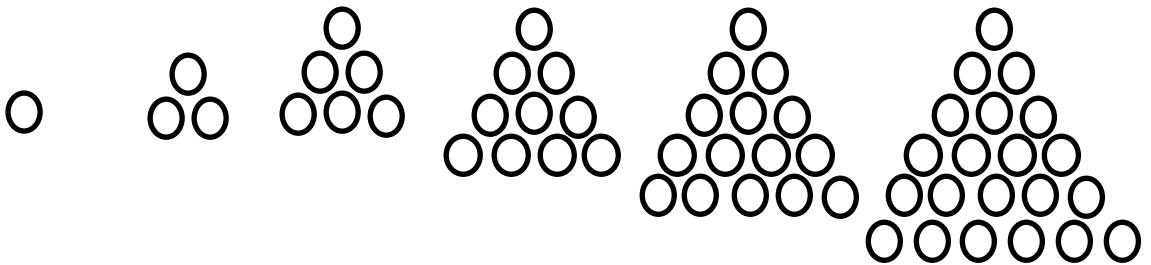
Grade 9 Mathematics

1. a) 2, 4, 6, 8 ... **10, 12, 14** b) 4, 7, 10, 13 ... **16, 19, 22**
c) 2, 4, 8, 16... **32, 64, 128** d) 7, 5, 2, -2 ... **-7, -13, -20**
e) $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \dots$ $\frac{1}{6}, \frac{1}{7}, \frac{1}{8}$ f) 3, 9, 15, 21... **27, 33, 39**
g) 1, 4, 9, 16 ... **25, 36, 49** h) 0, 3, 8, 15 ... **24, 35, 48**
i) 1, 8, 27, 64 ... **125, 216, 343** j) 5, 12, 19, 26 ... **33, 40, 47**

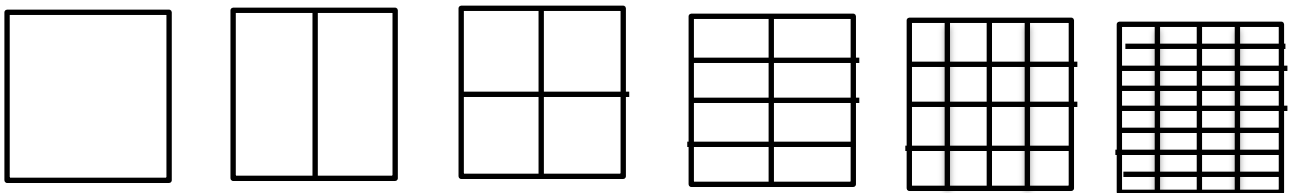
2. a)



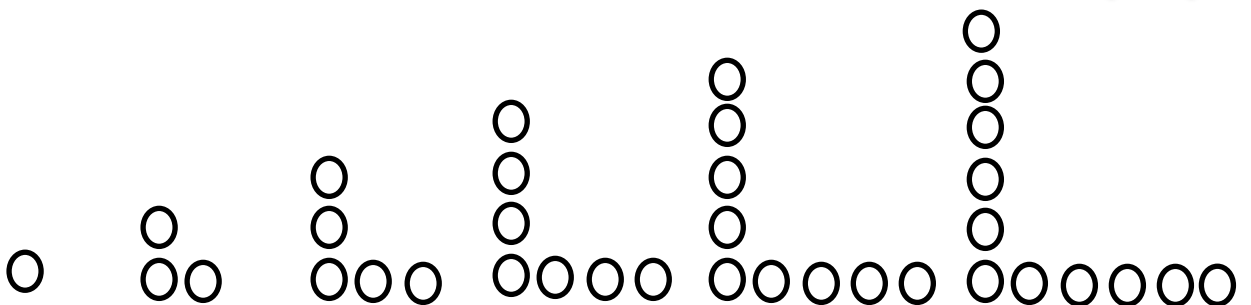
b)

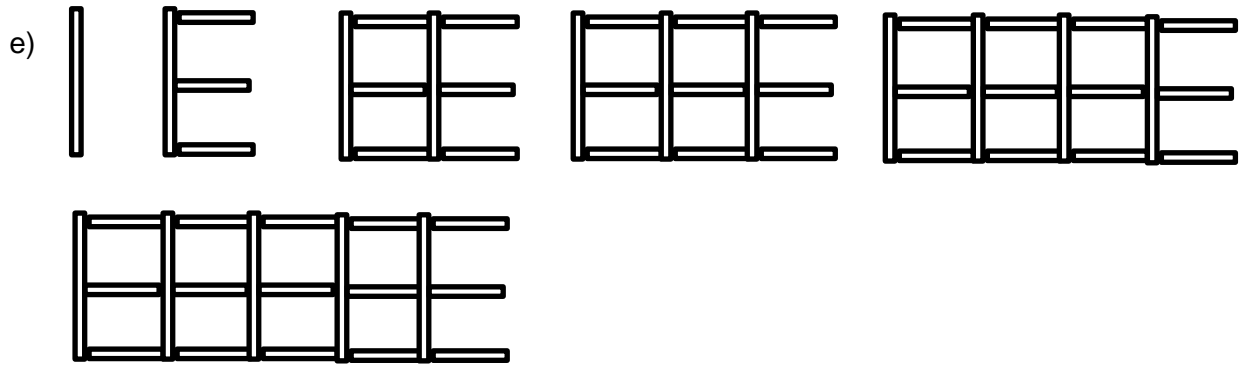


c)



d)





- 3.
1.
 - a) add 2 to the previous term
 - b) add 3 to the previous term
 - c) multiply the previous term by 2
 - d) subtract one less than the previous amount subtracted
 - e) add one more to the previous denominator
 - f) add 6 to the previous term
 - g) the square of each term position.
 - h) the square of each term position minus 1.
 - i) the cube of each term position.
 - j) add 7 to the previous term.
 2.
 - a) add an extra side to the previous shape.
 - b) add one more circle than was added to the previous row, to the new row
 - c) divide the shape in 2 for the next term.
 - d) add one extra circle to each end of the L.
 - e) add another E to the previous E's.
- 4.
- | | |
|------------------------|------------------|
| a) $y = 2x$ | b) $y = 3x + 1$ |
| c) $y = 2^x$ | d) leave out |
| e) $y = \frac{1}{x+1}$ | f) $y = 6x - 3$ |
| g) $y = x^2$ | h) $y = x^2 - 1$ |
| i) $y = x^3$ | j) $y = 7x - 2$ |

5. a)

x	-2	-1	0	1	2	7	10	16	n
y	-10	-7	-4	-1	2	17	26	44	$3n - 4$

b)

x	-2	-1	0	1	2	9	13	19	n
y	9	7	5	3	1	-13	-21	-33	$-2n + 5$

c)

x	-2	-1	0	1	2	8	11	15	n
y	4	1	0	1	4	64	121	225	n^2

d)

x	-2	-1	0	1	2	4	7	11	n
y	0.25	0.5	1	2	4	16	128	2048	2^n

e)

x	-2	-1	0	1	2	4	7	12	n
y	18	15	12	9	6	0	-9	-24	$-3x + 12$

