AGS 1 Name: _____ Period: _____ Date: _____

Notes 1.2 – Sequences

Warmup – Evaluate each expression, showing all steps

a. $15 \div 3 \bullet 5 - 4^2$

$15 \div 3 \cdot 5 - 16$

$5 \cdot 5 - 16$

$25 - 16$

$\boxed{9}$

b. $4\sqrt{9} - 8$

$4(3) - 8$

$12 - 8$

$\boxed{4}$

c. $[7(2) - 4] + 9 + 8(3 + 1)$

$[14 - 4] + 9 + 8(3+1)$

$10 + 9 + 8(3+1)$

$10 + 9 + 8(4)$

$10 + 9 + 32$

$19 + 32$

$\boxed{51}$

d. $\frac{(4 \bullet 3)^2 \bullet 5}{(9+3)}$

$\frac{(12)^2 \cdot 5}{9+3}$

$\frac{144 \cdot 5}{9+3}$

$\frac{720}{9+3}$

$\frac{720}{12}$

$\boxed{60}$

Graph and label each of the given points.

(x, y)

↔ ↕

P (0, −7)

E (8, 0)

D (−3, −5)

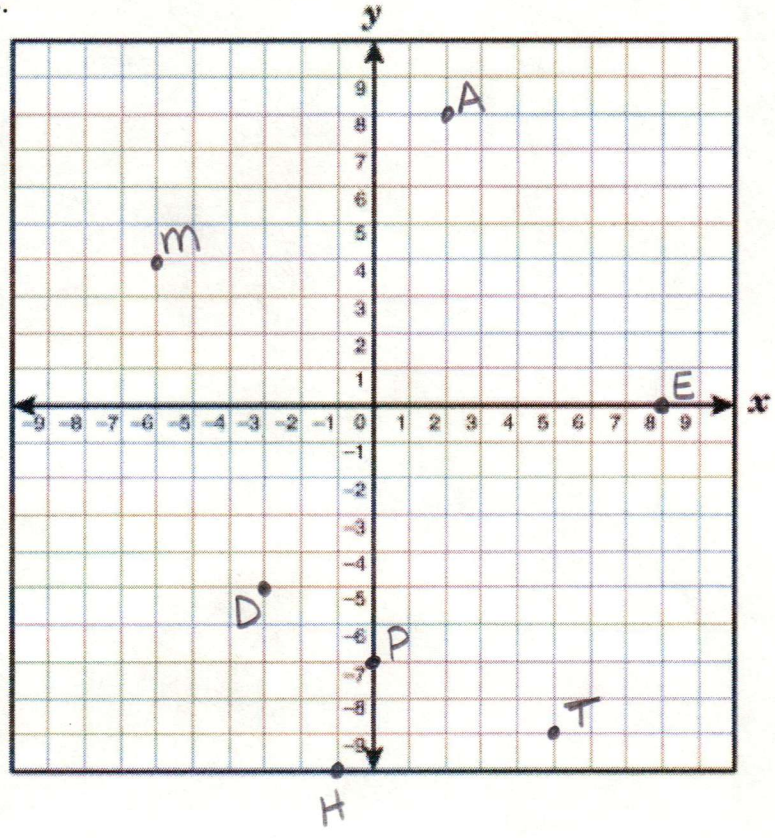
♥'s

M (−6, 4)

A (2, 8)

T (5, −9)

H (−1, −10)

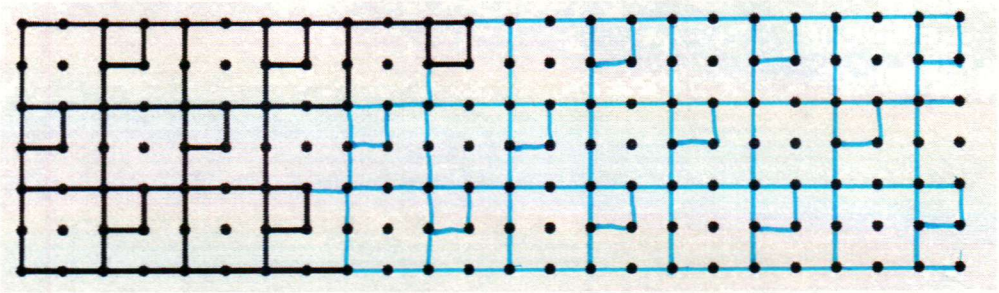


Lesson

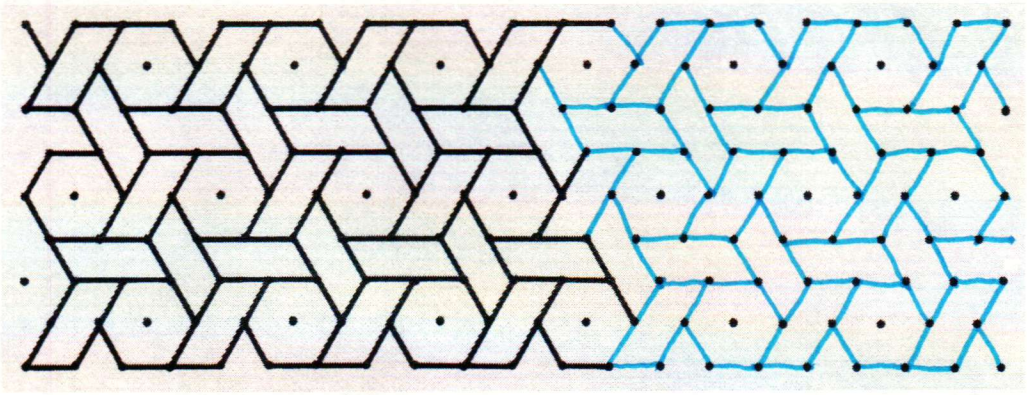
Word	Meaning/Notation	Example
Pattern	Any sequence that follows specific rules	2, 4, 6, 8, ... always increases by 2
Term	Any single number or variable separated by a +, −, or comma	2, 3, 4 4x − 5 term

Visual Patterns – Continue each of the visual patterns

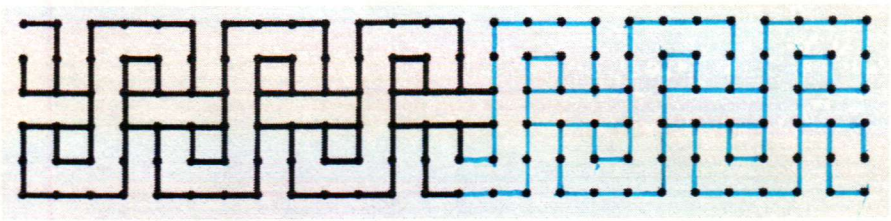
1.



2.



3.



4. How can you tell if you have correctly continued the pattern?

If you "pick up" part of the pattern, it should be able to exactly match the next section.

Number Patterns – Find the next term three terms for each pattern, then state how you found them.

5. 17, 27, 37, 47, 57, 67 How: add 10

6. 85, 81, 77, 73, 69, 65, 61 How: subtract 4

7. 10, 20, 30 / 40, 40 / 80, 50 / 160 How: add 10 / double

8. 1, 2, 2, 3, 3, 3, 4, 4, 4 How: the next natural number repeated that many times

9. 1, 2, 3, 5, 8, 13, 21 How: sum of previous two terms

10. 128, 64, 32, 16, 8, 4 How: half the previous term

11. 2, 6, 18, 54, 162, 486 How: multiply by 3

12. 1, 2, 4, 8 / 7, 16 / 11, 32 / 16 How: double / add one more each time

13. Describe some differences you noticed in how you got the new terms in the numerical patterns above.

add, subtract, multiply, divide,

14. Is it possible to get different patterns from the same starting values? Which numerical patterns above can have more than one pattern?

Yes, #7 and #12 have multiple possible patterns