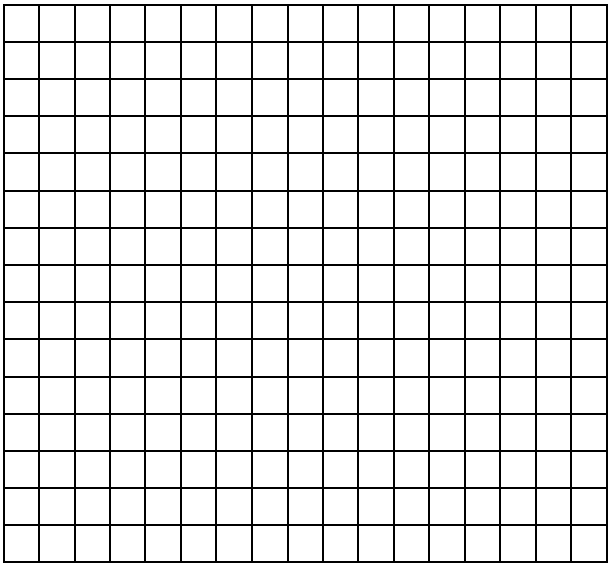
Name _____ Core _____ Date _____

Practice Problems # 10

4-3. On graph paper, draw Figure 0 and Figure 4 for the pattern at right.



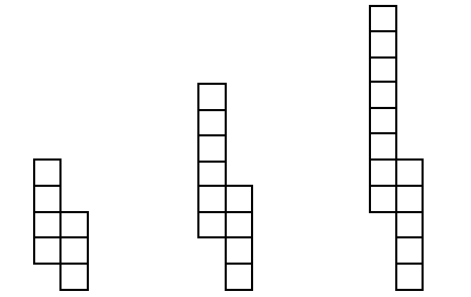
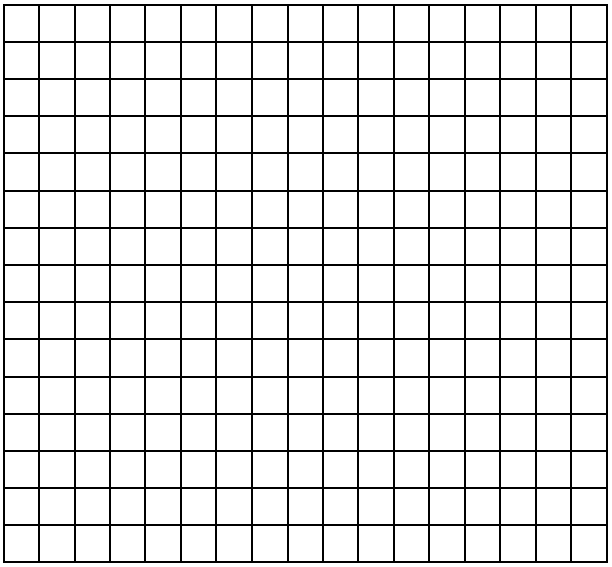


Figure 1 Figure 2 Figure 3

Represent the number of tiles in each figure in an $x \rightarrow y$ table. Let x be the figure number and y be the total number of tiles.

x					
y					

Make a complete graph for the pattern



Without drawing Figure 5, predict where its point would lie on the graph. Justify your prediction.

4-4. Evaluate the expressions below for the given values.

a. $3(2x + 1)$ for $x = -8$

b. $\frac{x-6}{4} - 1$ for $x = -14$

c. $-2m^2 + 10$ for $m = -6$

d. $k \cdot k \div k \cdot k \div k$ for $k = 9$

4-5. Copy and simplify the following expressions by combining like terms.

a. $x + 3x - 3 + 2x^2 + 8 - 5x$

b. $2x + 4y^2 - 6y^2 - 9 + 1 - x + 3x$

c. $2x^2 + 30y - 3y^2 + 4xy - 14 - x$

d. $20 + 3xy - 3xy + y^2 + 10 - y^2$

4-6. Use the Distributive Property to rewrite each expression.

a. $3(2x - 7)$

b. $-2(x - 7) + 5x$

c. $5x + 10$

d. $8x + 12y$

4-17. Simplify each of the following equations and solve for x. Show all work and **check your solution.**

a. $7 - 3x = -x + 1$

b. $-2 + 3x = -(x + 6)$

4-18. Leala can write a 500-word essay in an hour. If she writes an essay in 10 minutes, approximately how many words do you think the essay contains?

4-19. Complete the table below.

IN (x)	2	10	6	7	–3		–10	1000	x
OUT (y)	9	25	17			15			

a. Explain in words what is done to the input value (x) to produce the output value (y).

b. Write the rule you described in part (a) with algebraic symbols.

y=

4-10. Copy and simplify the following expressions by combining like terms.

a. $y + 3x - 3 + 2x^2 + 8x - 5y$

b. $2x + 4x^2 - 6x^2 - 9 + 1 - x - 3x$

c. $14 + 3y^2 + 30y - 3y^2 - 14y - 14 - 16y$

d. $-10x + 13y - 6x + 5y^2 + 10y - 5y^2$

4-11. Use your pattern-finding techniques to fill in the missing entries for the table below.

IN (x)	4	8	3	–2	–6	0	5	7
OUT (y)	17	65	10	5		1	26	

Rule in Words:

Algebraic Rule:

y=

4-20. When Susan's brother went to college, she and her two sisters evenly divided his belongings. Among his possessions were 3 posters, 216 books, and 24 CDs. How were these items divided?