Ready, Set, Go!

Ready

Topic: Fundamental Theorem of Arithmetic

The prime factorization of a number is given. Multiply each number to find the whole number that each factorization represents.

1. $2^4 \times 3^1 \times 5^2$ 2. $3^4 \times 5^2 \times 7^2$ 3. $5^2 \times 11^2 \times 13^1$

The following problems are factorizations of numerical expressions called quadratics. Given the factors, multiply to find the quadratic expression. Add the like terms. Write the x² term first, the x-term second, and the constant term last. (*Example: $ax^2 + bx + c$.*)

4. $(x+5)(x-7)$ 5. $(x+8)(x+3)$ 6. $2(x-9)(x-4)$

7. $3(x+1)(x-4)$ 8. $2(3x-5)(x-1)$ 9. $2(5x-7)(3x+1)$

Set

Use first and second differences to identify the pattern in the tables as *linear, quadratic*, or *neither*. Write the recursive equation for the patterns that are linear or quadratic.

10.

x	y
-3	-23
-2	-17
-1	-11
0	-5
1	1
2	7
3	13

a. Pattern:

b. Recursive equation:

11.

x	y
-3	4
-2	0
-1	-2
0	-2
1	0
2	4
3	10

a. Pattern:

b. Recursive equation:

12.

x	y
-3	-15
-2	-10
-1	-5
0	0
1	5
2	10
3	15

a. Pattern:

b. Recursive equation:

13.

x	y
-3	24
-2	22
-1	20
0	18
1	16
2	14
3	12

a. Pattern:

b. Recursive equation:

14.

x	y
-3	48
-2	22
-1	6
0	0
1	4
2	18
3	42

a. Pattern:

b. Recursive equation:

15.

x	y
-3	4
-2	1
-1	0
0	1
1	4
2	9
3	16

a. Pattern:

b. Recursive equation:

16.

Figure 1   Figure 2   Figure 3   Figure 4   Figure 5
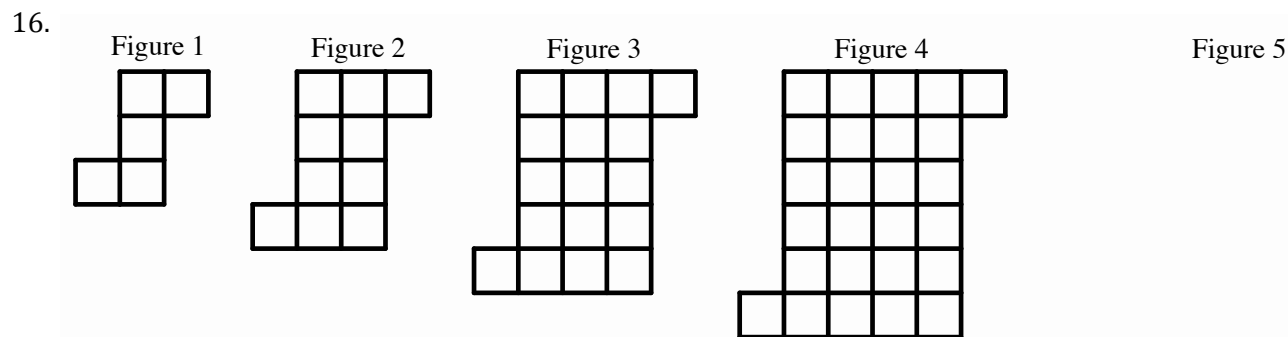
a. Draw figure 5.

b. Predict the number of squares in figure 30. Show what you did to get your prediction.

Go

Topic: Interpreting recursive equations to write a sequence

Write the first five terms of the sequence.

17. $f(0) = -5; f(n+1) = f(n) + 8$

18. $f(0) = 24; f(n+1) = f(n) - 5$

19. $f(0) = 25; f(n+1) = 3f(n)$

20. $f(0) = 6; f(n+1) = 2f(n)$