

Questions on 1.3? We will take our quiz soon!

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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. $3(x + 1)(x - 4)$
 $(3x + 3)(x - 4)$
 $3x^2 - 12x + 3x - 12$
 $3x^2 - 9x - 12$
 Set

8. $2(3x - 5)(x - 1)$
 $(x + 1)(3x - 12)$
 $3x^2 - 12x + 3x - 12$
 $3x^2 - 9x - 12$

9. $2(5x - 7)(3x + 1)$
 $3(x^2 - 4x + x - 4)$
 $3x^2 - 12x + 3x - 12$
 $3x^2 - 9x - 12$

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

11.

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

12.

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

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Write the first five terms of the sequence.

17. $f(0) = -5; f(n+1) = f(n) + 8$ *any term previous*

$(0, -5)$ $(1, 3)$ $(2, 11)$ $(3, 19)$ $(4, 27)$ $(5, 35)$

$f(0+1) = f(0) + 8$
 $f(1) = -5 + 8$
 $f(1) = 3$

18. ~~$f(0) = 24; f(n+1) = f(n) + 8$~~

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

$f(2) = f(1) + 8$
 $f(2) = 3 + 8$
 $f(2) = 11$

$f(3) = 11 + 8$
 $f(3) = 19$
 $f(4) = 19 + 8$
 $f(4) = 27$

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

$f(5) = 27 + 8$
 $f(5) = 35$

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14.

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

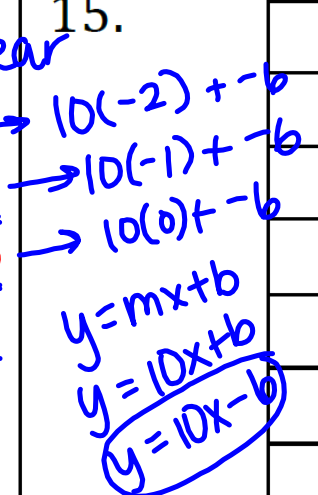


- a. Pattern: Quadratic
- b. Recursive equation:
PREVIOUS + 10x - 6

$$f(x) = f(x-1) + 10x - 6$$

15.

x
-3
-2
-1
0
1
2
3



- a. Pattern:
- b. Recursive

16. Figure 1 Figure 2 Figure 3 Figure 4 Figure 5

a. Draw figure 5.

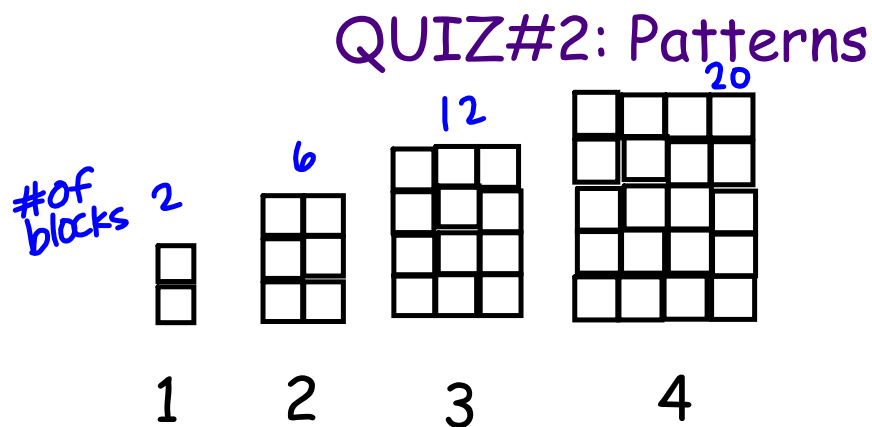
b. Predict the number of squares in figure 30. Show what you did to get your prediction.

$(x+1)(x+2) - x$
 $x^2 + 2x + x + 2 - x = x^2 + 2x + 2$ → Quadratic (x^2)

16. Figure 1 Figure 2 Figure 3 Figure 4

$x^2 + 2x + 2$

$x(x+2) + 2$
 $x^2 + 2x + 2$



- 1) Is the following pattern linear, exponential, or quadratic?
- 2) Write an explicit formula for the pattern.

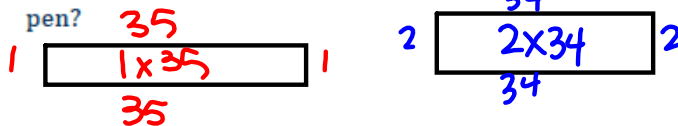
1.4 Rabbit Run

A Solidify Understanding Task

Misha has a new rabbit that she named "Wascal". She wants to build Wascal a pen so that the rabbit has space to move around safely. Misha has purchased a 72 foot roll of fencing to build a rectangular pen.



1. If Misha uses the whole roll of fencing, what are some of the possible dimensions of the pen?

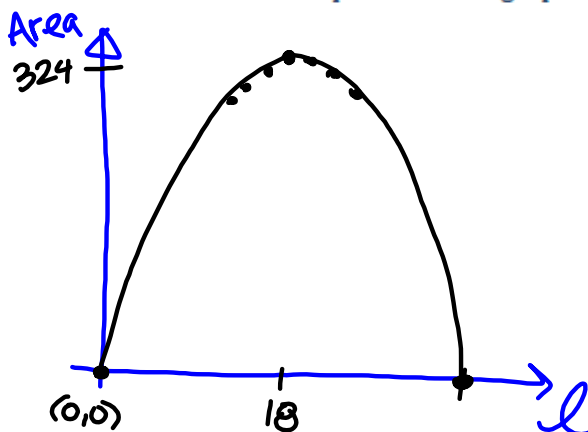


2. If Misha wants a pen with the largest possible area, what dimensions should she use for the sides? Justify your answer.

Dimensions	Area
1 x 35	35
2 x 34	68
...	...
17 x 19	323
18 x 18	324
19 x 17	323

18 x 18

3. Write a model for the area of the rectangular pen in terms of the length of one side. Include both an equation and a graph.



$$A = lw$$

$$P = 2l + 2w$$

$$\frac{72}{2} = \frac{2l + 2w}{2}$$

$$36 = l + w$$

$$\begin{array}{r} 36 = l + w \\ -l \quad -l \\ \hline (36 - l) = w \end{array}$$

$$A = l(36 - l)$$

$$A = 36l - l^2$$

4. What kind of function is this? Why?

Quadratic

5. How does this function compare to the second type of block I logos in *I Rule?*

$7n^2$

Homework/Classwork

Finish 1.4