

1.1 Patterns and Linear Functions

Relationship between the number of triangles and the perimeter of the figure they form? Represent this relationship using a table, words, an equation, and a graph.

# of triangles	Perimeter
1	$3+3+4 = 10$
2	$3+3+4+4 = 14$
3	$3+3+4+4+4 = 18$
4	$3+3+4+4+4+4 = 22$

Step 1: create table & identify pattern

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X	y
0	4
1	8
2	12
3	16

Step 1: identify pattern increase by 4

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Step 3: graph the relationship

Linear function

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Step 4: write equation

$$y = \boxed{4}x + \boxed{4}$$

pattern change

Find when $x=0$, use the y

$$y = 4x + 4 \checkmark$$

$$4(1) + 4$$

$$4 + 4 = 8$$

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X	Y
0	-3
1	-4
2	-5
3	-6

$y = -1$

$y = -1$

$y = -1$

$$y = \boxed{-1}x + \boxed{-3}$$

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Step 4: Write an equation

p = perimeter (end goal)

t = # of triangles

$$P = 4t + 6$$

$$p = 4(5) + 6$$

$$20 + 6$$

$$p = 26$$

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