

Prealgebra 1.5


→ Identify a function

relation  $(x, \text{partner})$

function  $(x, \text{only 1 partner})$


activity: blocks p.33 tiles p.33

$(x, y)$   
 $(2, 5)$   
 $(2, 1)$



Vikings  
What is your favorite pet?

Seth dog  
Anthony dog  
Alex dog  
Mrs. K. Cat



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Relation 1 is a function.

Domain	Range
Julie	Dog
Todd	Fish
Maria	Cat

Relation 2 is a function.

Domain	Range
Julie	Dog
Todd	Dog
Maria	Dog

Relation 3 is not a function.

Domain	Range
Julie	Dog
Todd	Fish
Maria	Cat

↑ x ↑ y    ↑ x ↑ y    ↑ x ↑ y

fn            fn            not fn.

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**Step 1** Three students reported the number of cell phone minutes they had every month. Copy and complete the mapping diagram shown below.

Student	1	2	3
Number of Minutes	400	400	750

Domain: {1, 2, 3}    Range: {400, 750}

**Step 2** Student 1 added a phone in the middle of the month and reported two sets of times. Copy and complete the mapping diagram with the new information.

Student	1	1	2	3
Number of Minutes	600	400	400	750

Domain: {1, 2, 3}    Range: {600, 400, 750}

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Make a mapping diagram for each relation. Then determine whether each relation is a function. Explain.

3.  $\{(2, 5), (4, 5), (6, 6), (7, 8)\}$

4.  $\{(12, 18), (16, 21), (16, 25), (20, 30)\}$

Does everybody have a favorite pet? (only one favorite)

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5.  $\{(1, 3), (9, 15), (6, 10), (9, 8)\}$

6.  $\{(5, 6), (10, 11), (8, 13), (0, 7)\}$

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Function Rule (operation(s) performed on the domain value to get the range value.)

Activity 2

Step 1 Use centimeter cubes to build the figures below.

Figure 1: 6 cubes  
Figure 2: 9 cubes  
Figure 3: 12 cubes

Step 2 Make a table like the one shown and record the figure number and number of cubes used in each figure.

Figure Number	Number of Cubes
1	6
2	9
3	12
4	15
5	18
...	...
8	27
...	...
12	39
...	...
20	63
...	...
30	93
...	...
100	303
...	...
1000	3003
n	3n+3

Step 3 Construct the next figure in this pattern. Record your results.

Step 4 Repeat Step 3 until you have found the next four figures in the pattern shown above.

group by 3 ea time     $3n+3$   
Start w 6

$8 \cdot 3 + 3 = 24 + 3 = 27$   
 $12 \cdot 3 + 3 = 36 + 3 = 39$   
 $20 \cdot 3 + 3 = 60 + 3 = 63$   
 $30 \cdot 3 + 3 = 90 + 3 = 93$   
 $100 \cdot 3 + 3 = 300 + 3 = 303$   
 $1000 \cdot 3 + 3 = 3000 + 3 = 3003$

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8. Perimeter is the distance around a figure. Write a rule that describes the relationship between the figure number  $x$  and the perimeter  $y$  for the figures shown below. Then make a table and graph the data on a coordinate plane.



Figure 1



Figure 2



Figure 3

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